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COAST AND GEODETIC SURVEY

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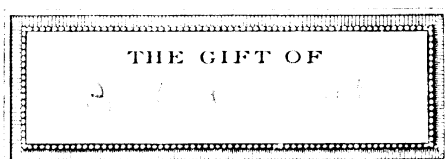
RESULTS OF OBSERVATIONS MADE AT THE COAST AND
GEODETIC SURVEY MAGNETIC OBSERVATORY
AT VIEQUES, PORTO RICO
1903-1904

BY

DANIEL L. HAZARD
Computer, Division of Terrestrial Magnetism



WASHINGTON
GOVERNMENT PRINTING OFFICE
1909



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RESULTS OF OBSERVATIONS MADE AT THE COAST AND GEODETIC SURVEY MAGNETIC OBSERVATORY AT VIEQUES, PORTO RICO, 1903-1904.

INTRODUCTION.

The first magnetic observatory equipped with self-recording instruments established by this Survey was at Key West, Florida. At that place a Brooke magnetograph was in operation from 1860 to 1866. The same instrument was later mounted at Madison, Wisconsin, and kept running from 1876 to 1880. The records of the observations at these two observatories were not very satisfactory. In 1882 an observatory was constructed at Los Angeles, California, and there an Adie magnetograph was kept in operation from October, 1882, to October, 1889. The results of these observations have been discussed and published in the reports of the Survey for 1890, 1891, and 1892. In 1890 the same Adie magnetograph was installed in an observatory at San Antonio, Texas. In 1892 the observatory had to be moved to a new location outside the city on account of the disturbing effect of an electric car line, and in March, 1895, it became necessary to discontinue the observatory on account of insufficient appropriation for magnetic work. From this brief summary it will be seen that prior to 1900 the magnetic observatory work of the Coast and Geodetic Survey was very limited in extent and intermittent in character.

In 1899 a much more liberal appropriation made it possible to begin a systematic magnetic survey of the United States and in connection therewith to prepare for the establishment of several magnetic observatories.

As the magnetic observatory which had been operated in connection with the Naval Observatory, in Washington, District of Columbia, had been rendered useless by the encroachment of electric car lines, it was decided to erect the principal magnetic observatory of the Coast and Geodetic Survey at Cheltenham, Maryland, about 14 miles southeast of Washington. The necessary buildings were begun toward the end of 1900, and completed in time to begin observations in April, 1901. In order to provide the means for reducing to mean of day the field observations made in the Middle West, an Eschenhagen magnetograph was mounted at Baldwin, Kansas, in an existing structure fairly well adapted for the purpose, in June, 1900. In the autumn of 1901 observatories were constructed at Sitka, Alaska, and near Honolulu, Hawaii, and the records of these observatories begin with January, 1902. In February, 1903, the old Brooke magnetograph, somewhat modified and improved, was installed in a room in Fort Isabel Segunda, on Vieques Island, Porto Rico. Observations were continued there until the spring of 1907, at which time the instruments were transferred to a specially constructed building about five-eighths of a mile to the west of the old fort. Full details of the location and construction of the buildings at Cheltenham, Sitka, and near Honolulu will be found in Appendix 5, Coast and Geodetic Survey Report for 1902.

The present publication contains the results of the absolute and variation observations at the Porto Rico observatory for the two years 1903 and 1904. Owing to modifications in design of the instrument and delay on the part of the instrument maker, it was not possible to secure vertical force variometers of the improved Eschenhagen type until 1904, and one was not installed at Porto Rico until February, 1905. Consequently this publication contains no vertical intensity results, but the results of the dip observations are tabulated instead.

The preparation of the rooms in the fort for observatory purposes and the mounting and adjustment of the instruments were done under the personal direction of Dr. L. A. Bauer. The work of the observatory was carried on by R. F. Soper until August, 1903. After that time W. B. Keeling was observer in charge until July, 1904, when he was relieved by P. H. Dike.

ADMINISTRATION.

The direct supervision of the magnetic work of the Coast and Geodetic Survey is assigned to an assistant to the Superintendent, designated "Inspector of Magnetic Work." This position was filled by Dr. L. A. Bauer from 1899 to September 1, 1906. Under his able direction the sites for the observatories were selected, buildings designed and erected, instruments purchased and installed, and the work established on its present efficient basis. When Dr. Bauer resigned from the Coast and Geodetic Survey in 1906, Mr. R. L. Faris was appointed to succeed him as Inspector of Magnetic Work.

The field and observatory work is carried on by a force of eight or ten magnetic observers. At each observatory there is an observer in charge, assisted occasionally by one additional observer and usually by one helper to perform the manual work and assist in the scaling of ordinates and in the simpler forms of computation. The observers are transferred from one observatory to another or assigned to field work as the exigencies of the Survey demand.

The records of the various observatories are transmitted as promptly as possible to the office of the Coast and Geodetic Survey at Washington, and turned over to the Division of Terrestrial Magnetism for computation and discussion. The Inspector of Magnetic Work, who is also chief of this division, had at the beginning only one computer to assist him in the work of the division. At present the office force consists of three computers and a clerk.

When magnetic observatory work was resumed by the Coast and Geodetic Survey in 1900, the magnetic observers were without experience either in the operation of magnetographs or in the reduction of variation observations. Moreover, they had to work with a type of magnetograph which had been in use for so short a time that very little had been published concerning the practical questions involved in its operation. As a natural result, some time elapsed before the observatory records were entirely satisfactory and some of the earlier records were forwarded to the Office without the completion of the computations usually made at the observatory, thus throwing more work on the office force. In the Office it was necessary to solve many problems and devise new methods before the work of reducing the variation observations could proceed smoothly. Hence the limited computing force proved insufficient to advance the computations as rapidly as the records were received, and the publication of results has been delayed in consequence.

DEFINITIONS.

To avoid confusion, some of the terms used in this publication are here defined:

Magnetograph—An instrument giving a continuous photographic record of the variations of the earth's magnetism, consisting of a recording apparatus and one or more variometers.

Magnetogram—The sheet of paper having upon it the photographic record of the magnetograph.

Thermogram—The sheet of paper having upon it the record of the temperature changes made by the pen of the thermograph.

D—Declination, positive when east.

H—Horizontal intensity.

Z—Vertical intensity.

I—Dip.

F—Total intensity.

X—North-south component, positive when north.

Y—East-west component, positive when east.

γ —0.00001 C. G. S. unit of magnetic intensity.

D base-line value—The absolute value of declination corresponding to a zero ordinate. Similarly, *H base-line value*.

METHODS.

The program of observatory work includes absolute observations for declination, dip, and horizontal intensity twice a week for the purpose of reducing the variation observations to absolute measure. A set of declination observations usually consists of 8 pointings on the magnet, 4 erect and 4 inverted. Torsion is removed from the suspension fiber beforehand by the use of a brass weight of about the same mass as the magnet. Horizontal intensity (H) and the magnetic moment (m) of the magnet are determined by combining observations of oscillations and deflections, using the formulæ:*

$$mH = \frac{\pi^2 K}{T^2}$$

$$\frac{H}{m} = \frac{C}{\sin u}$$

in which—

K is the moment of inertia of the oscillation magnet and stirrup, determined by special observations using an auxiliary weight of known dimensions and mass.

T is the time of one oscillation, corrected for torsion, induction, and difference in the temperature of oscillations and deflections.

u is the deflection angle.

C is a factor which may be regarded as constant for a particular deflection distance and a particular temperature. Its determination requires deflection observations at 2 or 3 distances from which to compute the distribution coefficients, careful measurement of the deflection distances, and observations to determine the induction coefficient. The variation of C with temperature depends simply upon the temperature coefficient of the material (usually brass) of which the deflection bars are constructed.

A dip determination with a dip circle comprises observations with two needles, with the usual reversals of instrument, polarity of needle, and position of needle on the agate supports. In the case of dip circle No. 1, there was only a single needle, so two sets were made with that on each occasion.

Deflection observations were made about once in two months to determine the scale value of the horizontal intensity variometer. The magnetogram is usually changed between 4^h and 5^h p. m. In order to fix accurately the time scale on the magnetograms, the time is recorded of automatic or artificial time breaks occurring about 5 p. m., 9 a. m., and 4 p. m., as well as the times of starting and stopping the photographic record. To obtain the magnetograph temperatures from the record of the thermograph, the magnetograph thermometers are read about 9 a. m. and 4 p. m. In the morning a mark is made on the thermograph sheet to fix the time scale.

The observer in charge computes his absolute observations and scale value determinations, measures the ordinates from the magnetograms for each hour, local mean time, and for the times when the absolute observations were made, and computes therefrom the values of base line. He also derives the temperature of the magnetograph for each hour from the readings of the thermograph. The remainder of the computations is made by the computers in the Office.

For measuring the ordinates, a reading board † designed by W. B. Keeling, magnetic observer, and constructed in the instrument shop at the Office of the Survey, has proved of great assistance, and each observatory is provided with one. As it was not possible to secure clear, well-defined lines with the Brooke magnetograph, the practice was adopted of reading from the middle of the base line to the middle of the curve.

Early in the work it was found that a magnetogram is subject to variation in size, amounting to as much as 1 per cent, depending upon the amount of moisture in the atmosphere. In

* In the case of magnetometer No. 3, $\tan u$ must be substituted for $\sin u$ in the second formula.

† For an illustration and description see "Results of Observations made at the Coast and Geodetic Survey Observatory at Cheltenham, Md., 1901-1904."

order to be able to correct for this, each observatory is provided with a narrow strip of wood, as long as the magnetogram is wide, with a needle point fastened in each end. The distance between the points is accurately measured. As soon as a magnetogram is removed from the drum it is laid on its face and the strip of wood is pressed down on it near each end and small holes are made by the needle points. A comparison of the distance between these holes at any future time with the distance between the needle points at the time they were made serves to determine the amount of shrinkage or expansion.

LOCATION AND BUILDINGS.

Latitude: $18^{\circ}08'.9$ N. Longitude: $65^{\circ}26'.4$ W. Altitude: 40 meters (130 feet).

When planning for the expansion of the magnetic work of the Coast and Geodetic Survey, the desirability of having a magnetic observatory in Porto Rico was recognized, but its establishment had to be postponed until the construction and equipment of the other magnetic observatories had been completed. At the time of the eruption of Mont Pelée on May 8, 1902, there was a magnetic disturbance of considerable magnitude, the beginning of which very nearly coincided with the beginning of the eruption. The possibility of a recurrence of

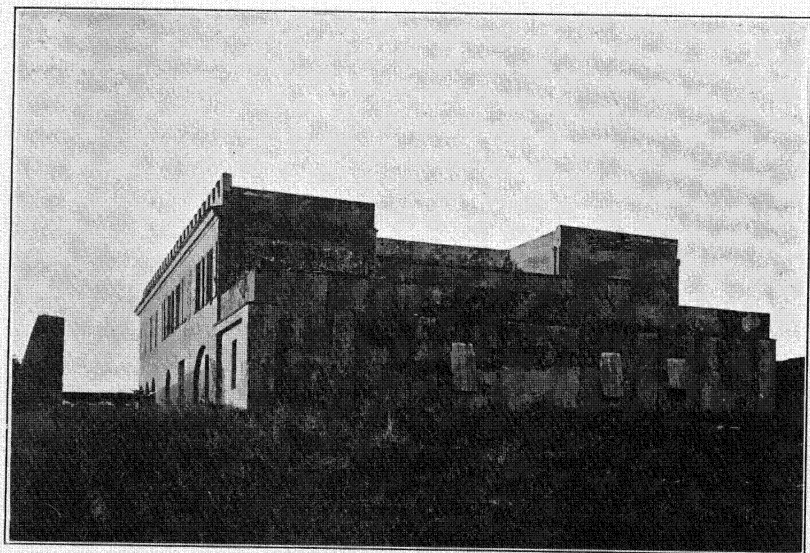


FIG. 1. -- Fort Isabel Segunda, south side.

such outbreaks in the West Indies increased the desirability of having a continuous record of the variations of the earth's magnetism in that region, in order that a closer study might be made of the relation between the two phenomena. Arrangements were therefore made for the establishment of a temporary magnetic observatory on Vieques Island, a small island to the east of the island of Porto Rico. Through the courtesy of the insular government, several rooms on the ground floor of Fort Isabel Segunda were secured for the use of the observatory. This fort is a large stone building situated on a hill back of the town of Vieques, about half a mile from the north shore of the island. It is no longer armed or garrisoned, but while used for observatory purposes was in charge of and occupied in part by the insular police.

The rooms assigned for the work of the observatory were on the south and east sides of the fort, as shown in Fig. 2. The large room extending from the corner, along the south side, was divided by a partition into a small room at the corner for absolute observations, and a

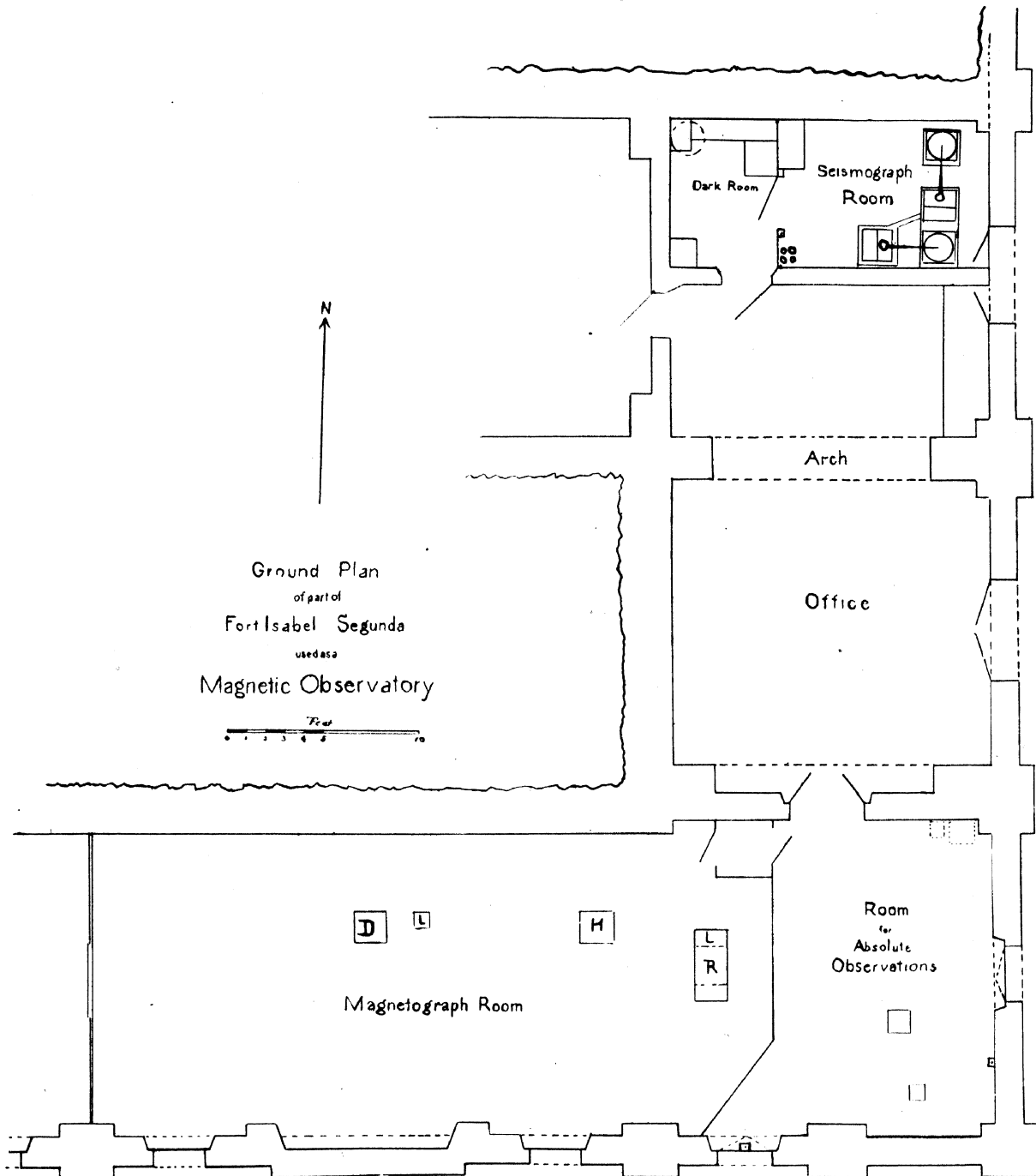


FIG. 2.—Ground plan of part of Fort Isabel Segunda.

room for the magnetograph, about 15 by 35 feet in size. The windows of this room were boarded up inside and out in order to keep out the light and reduce the temperature variations. No further steps were taken to insulate the magnetograph room, but the thick walls of the fort were sufficient to limit the diurnal range of temperature inside to $1^{\circ}.2$ Centigrade

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on the average, as compared with about $6^{\circ}.0$ outside. The seasonal variation is very small, as will be seen from the following table:

Daily and monthly range in temperature (Centigrade).

Month.	1903.			1904.		
	Maximum.	Minimum.	Average daily range.	Maximum.	Minimum.	Average daily range.
	°	°	°	°	°	°
January.....				29.5	25.8	1.1
February.....				28.9	26.0	1.4
March.....				29.0	25.4	1.2
April.....	30.4	27.3	1.3	29.0	25.9	1.4
May.....	30.1	27.7	1.2	29.3	26.4	1.3
June.....	30.4	27.6	1.1	29.9	27.0	1.0
July.....	30.8	28.3	1.2	30.0	27.1	1.2
August.....	31.4	27.2	1.3	30.8	27.7	1.2
September.....	31.3	27.9	1.3	30.1	26.7	1.1
October.....	31.3	27.3	1.1	31.0	25.8	1.1
November.....	30.8	27.1	1.1	30.1	26.8	1.0
December.....	29.1	26.4	1.0	29.2	27.0	1.1
Year.....	31.4	26.4	1.2	31.0	25.4	1.2

The magnetograph was mounted on solid stone piers, not in contact with the concrete floor of the room.

Absolute observations were made in the corner room in the fort up to the end of January, 1904. In that month an absolute observatory 10 by 12 feet in size was built on a hill about 500 feet southeast of the fort, and observations began there the end of January. For the support of the instruments three wooden posts were set firmly in the ground before the floor of the building was laid.

The room on the east side of the fort, adjoining the one in which absolute observations were made, was used as an office, and to the north of that was the dark room, part of which was afterwards converted into a seismograph room.

INSTRUMENTS.

VARIATION INSTRUMENTS.

The magnetograph operated at the Porto Rico magnetic observatory from February, 1903, to May, 1905, consisted of the declination (unifilar) and horizontal intensity (bifilar) variometers of the old Brooke magnetograph, which had been used at Key West, Fla., 1860-1866, Madison, Wis., 1877-1881, and Ooglamie, near Point Barrow, Alaska, 1882-1883, and an Eschenhagen recording apparatus arranged for running at two speeds, one revolution in 24 hours, or one revolution in 2 hours. Separate lamps were required for the two variometers. The relative positions of the different parts of the instrument are shown in Fig. 2. The variometers have large rectangular magnets suspended from brass tripods by means of silk fibers. A glass tube inclosing the fibers extends from the glass cylinder surrounding the magnet to the head of the tripod, and the torsion head is covered by a bell jar, so that all currents of air are excluded. For the *D* magnets a bundle of 20 fibers was used. Each fiber was stretched separately by means of weights, and then the 20 were tied into a bundle at intervals of a few inches. After the magnet was suspended the fibers continued to stretch, so that the torsion head had to be raised several times before a stable condition was reached. The horizontal intensity magnet was supported by 10 fibers doubled (over the pulley). The magnetograph was mounted in February, 1903, but several changes of adjustment were required

during March, so that the results given herewith begin with April. It was found impossible to secure a sharply defined record from these variometers. Nearly every day, shortly after midnight, the lines on the magnetogram made by the light from the mirrors attached to the magnets began to widen out and appear fuzzy and dim, the width increasing from a fraction of a millimeter to several millimeters. This condition lasted for several hours, gradually becoming less and less marked, and usually disappearing about 8 to 10 a. m. For the rest of the day the curves were satisfactory. When the recording cylinder was made to revolve once in two hours during the disturbed period, the horizontal intensity curve appeared as a comparatively regular series of waves and the declination curve as a series of serrations, showing that the magnets were in constant vibration. No such disturbance was shown by an Eschenhagen variometer mounted in the same room nor by the magnetometer in the adjoining room, so that the trouble was evidently peculiar to the Brooke variometers. Apparently the disturbance of the magnets was associated with decrease in temperature, as it occurred at the time of day when the temperature was falling, and on some days when the fall in temperature continued throughout the day, the disturbance continued also. While this broadening of the curves hides the small variation of D and H for a portion of each day, it does not appreciably reduce the accuracy of the measurement of the hourly ordinates, since the center of the curve can be determined with but little difficulty.

The variations in temperature in the magnetograph room were measured by a thermograph mounted on a wooden post near the H variometer.

ABSOLUTE INSTRUMENTS.

Up to the end of January, 1904, absolute observations of declination and horizontal intensity were made with an old magnetometer (No. 3), made by Jones of London, having a detached theodolite for pointing upon the suspended magnet. This is the same magnetometer that was used at the Baldwin magnetic observatory in 1901 and part of 1902, but it was repaired and improved in several ways before being sent to Porto Rico, especially by the substitution of a brass deflection bar for the wooden one which was used at Baldwin. Consequently the results obtained with it at Porto Rico were more accurate and consistent than those at Baldwin.

In January, 1904, magnetometer No. 31 took the place of No. 3. This is an instrument of the India Magnetic Survey pattern, illustrated and described in "Results of Observations made at the Coast and Geodetic Survey Magnetic Observatory at Baldwin, Kans., 1901-1904." No. 31 is provided with a vertical circle, so as to adapt it for use in astronomical observations.

Dip observations were made with Barrow dip circle No. 1 up to July, 1904, and after that time with Kew dip circle No. 18. Dip circle No. 1 was used at the Cheltenham magnetic observatory in 1901, and gave fairly consistent results. At Porto Rico, however, the results with it were not at all satisfactory. No. 18 is an old instrument, but it was overhauled by Dover in 1901 and provided with a new set of needles. It was an improvement over No. 1, but still left much to be desired. As no vertical force variometer was in operation, however, great accuracy of dip observations was not required.

SEISMOGRAPH.

In September, 1903, a Bosch-Omori seismograph, comprising two horizontal pendulums, was mounted in the room north of the office on stone piers.

ACCESSORIES.

Chronometers and meteorological instruments. Time observations were made with the theodolite of magnetometer No. 3, or with magnetometer No. 31, either noting the time of the sun's meridian passage or else using the method of equal altitudes.

INSTRUMENTAL CONSTANTS OF THE MAGNETOGRAPH.

DECLINATION VARIOMETER.

Where the range of declination is so small as it is at Vieques, it is desirable to have the D variometer well removed from the recording apparatus so as to magnify the motion of the magnet. The distance was made 5182.5 mm., so that 1 millimeter on the magnetogram corresponded to an angular motion of $0'.332$. Absolute observations were made regularly twice a week, morning and afternoon, at about the times of maximum and minimum declination. A comparison of the morning and afternoon base-line values brought out the fact that the daily range as derived from the magnetometer was systematically greater than the value indicated by the magnetograph, the ratio being 1.3 to 1, on the average, for each of the two magnetometers used. During the months of March, April, and May, 1905, an Eschenhagen magnetograph was operated in the same room with the Brooke and the former gave values of daily range averaging about 20 per cent greater than the latter. It is evident that most of the trouble, at least, was with the Brooke magnetograph. Apparently there was a variation in the torsion of the suspension fibers, due to varying conditions either of temperature or humidity, or both. It apparently was not a function of the temperature and no humidity observations were made. In order to bring the results with the two magnetographs into better accord, the scale value of the Brooke magnetograph was increased by 20 per cent, to $0'.4$.

HORIZONTAL INTENSITY VARIOMETER.

Scale value.—Deflection observations for the determination of the scale value of the H variometer were made about once in two months. No adjustments were made to cause a change in the scale value and the results show little variation (from 2.24γ to 2.28γ) throughout the two years when the Brooke magnetograph was in operation. The average of 12 determinations, 2.25γ , was therefore adopted for the whole period.

Temperature coefficient.—No special observations were made for the determination of the temperature coefficient, but it was derived from the H base-line values (uncorrected for temperature) selecting short periods, during which there was both rising and falling temperature and no abrupt change of base line. The absolute observations with magnetometer No. 3 were not sufficiently accurate to use the base-line values derived from them for the above purpose. Beginning with January, 1904, when the first observations with magnetometer No. 31 were made, 12 values were obtained of the effect of a change in temperature of 1° Centigrade, ranging from 17.5γ to 26.0γ , the average of the 12 being 20.8γ . For $H=29200\gamma$, this corresponds to a temperature coefficient of 0.00071, which has been adopted. When it is considered that the average range of temperature for the 12 determinations was only a little more than 1° it will be seen that the range of the individual results is not excessive.

ABSOLUTE OBSERVATIONS AND BASE-LINE VALUES.

DECLINATION.

Declination observations were made regularly twice a week, one set in the morning and one in the afternoon. Up to February 5, 1904, observations were made in the room in the corner of the fort adjoining the magnetograph room, using magnetometer No. 3. Beginning with January 28, 1904, observations were made with magnetometer No. 31, in the absolute observatory on the hill. Observations were also made on the hill with No. 3 in December, 1903, and January, 1904, in order to determine the relation between the two stations and the two instruments. The comparisons resulted as follows: West declination by magnetometer No. 31, $1'.0$ greater than by No. 3. West declination in the fort $6'.9$ greater than on the hill. When the observatory was moved to the new site in 1907, an extended series of observations gave the relation: West declination at new site $12'.4$ greater than on the hill. When compared with the standard declinometer at Cheltenham, magnetometer No. 31 was found to differ only

0'.2, a quantity which may be neglected, being less than the error of determination. In order to make the whole series of observations homogeneous and referring to the absolute observatory at the new site, corrections have been applied to the observed west declinations as follows:

Magnetometer No. 3 in the fort.....	+ 6.5
Magnetometer No. 3 on the hill.....	+13.4
Magnetometer No. 31 on the hill.....	+12.4

On December 21, 1903, it was found that the fibers supporting the *D* magnet had stretched so that the mirror attached to the magnet touched the fixed mirror. The torsion head was therefore raised and the instrument adjusted. Again on September 6, 1904, the variometer was found to need readjusting. On May 13, 1904, there was a slight change in base-line value due probably to an accidental jarring of the instrument.

The base-line values show a gradual decrease from April to September, 1903, and then a slight increase to the readjustment in December. In 1904 there was a slight decrease throughout the year except for the two months preceding the adjustment in September. A comparison of the observed and adopted values is presented in the following table:

Declination base-line values.

Date.	Observed.	Adopted.	Date.	Observed.	Adopted.	Date.	Observed.	Adopted.
1903.	/	/	1903.	/	/	1904.	/	/
April 3.....	72.4W	72.0W	September 4.....	66.6W	65.2W	January 25.....	68.1W	69.3W
April 6.....	72.4	71.7	September 7.....	66.8	65.1	January 27.....	69.0	69.1
April 10.....	73.0	71.4	September 11.....	64.6	65.1	January 28.....	68.6	69.0
April 13.....	68.2	71.1	September 14.....	64.5	65.1	January 29.....	69.9	68.9
April 17.....	70.6	70.8	September 18.....	64.6	65.1	January 30.....	69.3	68.8
April 20.....	71.4	70.5	September 21.....	64.3	65.1	February 1.....	68.6	68.6
April 24.....	72.3	70.1	September 25.....	64.6	65.1	February 2.....	68.5	68.6
April 25.....	69.3	70.0	September 28.....	64.4	65.1	February 3.....	68.1	68.5
April 27.....	70.0	69.9	October 2.....	64.9	65.1	February 4.....	68.3	68.5
May 1.....	68.3	69.5	October 5.....	65.0	65.1	February 5.....	68.5	68.5
May 4.....	66.6	69.3	October 9.....	65.3	65.2	February 8.....	69.1	68.4
May 8.....	69.1	69.1	October 12.....	65.1	65.2	February 12.....	68.5	68.2
May 11.....	69.7	68.9	October 16.....	64.6	65.2	February 15.....	68.0	68.1
May 15.....	69.9	68.7	October 21.....	64.8	65.2	February 19.....	67.9	68.0
May 18.....	69.1	68.5	October 23.....	65.4	65.2	February 22.....	67.7	68.0
May 22.....	68.9	68.2	October 26.....	66.6	65.3	February 26.....	67.8	67.9
May 25.....	67.7	68.1	October 30.....	65.0	65.3	February 29.....	67.4	67.8
May 29.....	68.2	67.8	November 2.....	66.0	65.3	March 4.....	67.8	67.8
June 1.....	66.8	67.6	November 6.....	65.8	65.3	March 7.....	67.6	67.7
June 5.....	66.8	67.4	November 9.....	66.0	65.4	March 12.....	67.9	67.6
June 8.....	67.7	67.3	November 13.....	64.9	65.4	March 14.....	67.2	67.6
June 12.....	67.4	67.2	November 16.....	65.2	65.4	March 19.....	67.5	67.5
June 15.....	67.4	67.0	November 20.....	65.5	65.4	March 21.....	67.8	67.4
June 19.....	66.8	66.9	November 23.....	65.0	65.4	March 25.....	67.1	67.3
June 22.....	67.1	66.8	November 27.....	65.6	65.5	March 28.....	67.3	67.3
June 26.....	67.1	66.6	November 30.....	64.9	65.5	April 1.....	67.2	67.2
June 29.....	65.4	66.5	December 1.....	65.2	65.5	April 4.....	67.1	67.2
July 1.....	66.0	66.4	December 3.....	65.2	65.5	April 8.....	67.3	67.1
July 3.....	66.8	66.3	December 4.....	65.7	65.5	April 11.....	66.3	67.0
July 6.....	66.3	66.3	December 7.....	65.9	65.6	April 15.....	66.7	66.9
July 11.....	66.1	66.2	December 8.....	65.8	65.6	April 18.....	66.7	66.9
July 13.....	65.5	66.1	December 9.....	66.2	65.6	April 23.....	66.7	66.8
July 15.....	65.4	66.0	December 11.....	65.9	65.6	April 25.....	67.0	66.7
July 17.....	66.1	66.0	December 14.....	65.6	65.6	April 29.....	66.6	66.6
July 20.....	66.0	65.9	December 18.....	64.4	65.6	May 2.....	66.7	66.6
July 24.....	66.2	65.8	December 25.....	70.6	70.7	May 6.....	66.5	66.5
July 27.....	65.0	65.7	December 28.....	69.9	70.7	May 9.....	66.4	66.4
August 1.....	66.6	65.6				May 13.....	66.0	65.9
August 3.....	65.3	65.6	1904.			May 16.....	66.0	65.9
August 7.....	65.8	65.5	January 1.....	70.9	70.7	May 20.....	65.8	65.8
August 10.....	64.9	65.5	January 4.....	71.0	70.7	May 23.....	66.0	65.8
August 14.....	65.5	65.4	January 5.....	70.9	70.7	May 27.....	65.8	65.7
August 17.....	66.4	65.4	January 8.....	70.8	70.7	May 30.....	65.7	65.7
August 21.....	65.9	65.3	January 15.....	70.3	70.3	June 3.....	65.6	65.6
August 24.....	66.2	65.3	January 18.....	70.0	70.0	June 6.....	65.4	65.6
August 28.....	66.8	65.2	January 22.....	68.7	69.6	June 10.....	65.7	65.5
August 31.....	66.0	65.2	January 23.....	69.0	69.5	June 13.....	65.7	65.5

Declination base-line values—Continued.

Date.	Observed.	Adopted.	Date.	Observed.	Adopted.	Date.	Observed.	Adopted.
1904.	/	/	1904.	/	/	1904.	/	/
June 17.....	65.3W	65.5W	August 26.....	66.2W	66.2W	November 4.....	71.5W	71.8W
June 20.....	65.4	65.4	August 29.....	66.3	66.3	November 7.....	71.3	71.7
June 24.....	65.0	65.4	September 2.....	66.1	66.3	November 11.....	71.3	71.5
June 27.....	65.5	65.4	September 10.....	72.1	73.9	November 14.....	71.4	71.4
July 1.....	65.3	65.5	September 12.....	73.8	73.8	November 18.....	71.0	71.3
July 4.....	65.3	65.5	September 16.....	74.0	73.7	November 21.....	71.1	71.2
July 8.....	65.4	65.6	September 19.....	73.7	73.5	November 25.....	71.2	71.1
July 11.....	65.4	65.6	September 23.....	73.5	73.4	November 28.....	71.4	71.0
July 15.....	65.4	65.7	September 26.....	73.4	73.3	December 2.....	71.7	70.8
July 18.....	65.2	65.7	September 30.....	73.5	73.1	December 5.....	71.0	70.7
July 22.....	66.2	65.8	October 3-4.....	73.0	73.0	December 9.....	70.8	70.6
July 25.....	65.7	65.8	October 7.....	73.2	72.8	December 12.....	70.3	70.5
July 29.....	66.0	65.9	October 10.....	74.3	72.7	December 16.....	70.2	70.4
August 2.....	66.1	65.9	October 14.....	72.9	72.5	December 19.....	70.1	70.3
August 12.....	66.7	66.0	October 17.....	72.3	72.4	December 23.....	70.0	70.1
August 15.....	66.2	66.1	October 21.....	72.5	72.3	December 26.....	70.2	70.0
August 19.....	66.2	66.1	October 24.....	72.4	72.1	December 30.....	70.0	69.9
August 22.....	66.4	66.2	October 31.....	72.0	71.9			

HORIZONTAL INTENSITY.

Absolute observations of horizontal intensity were made regularly twice a week, a single determination, consisting of one set of deflections between two sets of oscillations. As in the case of the declination, the observations were made in a room in the fort, using magnetometer No. 3, up to the end of January, 1904, after which the absolute observatory on the hill and magnetometer No. 31 were used. Observations were also made to determine the relation between the two instruments and the two stations, which resulted as follows:

Fort—hill.....	<i>r</i>
No. 3—No. 31.....	95
	87

When the observatory was moved to the new site in 1907, it was found that the horizontal intensity is 235γ greater there than on the hill. As a result of direct and indirect comparisons between magnetometer No. 31 and magnetometer No. 26 at Cheltenham it was found that No. 31 requires a correction of $+0.00095H$ to reduce to the Cheltenham standard.* This amounts to 28γ at Vieques. In order to refer all the observations to the absolute observatory at the new site, corrections have been applied as follows:

Magnetometer No. 3, in fort.....	<i>r</i>
Magnetometer No. 3, on hill.....	+ 81
Magnetometer No. 31, on hill.....	+176
	+263

A comparison of the observed and adopted base-line values is presented in the following table. While the results with No. 3 are better than those obtained at Baldwin, the differences from the adopted values are sometimes quite large. Fortunately the variometer required only one adjustment while magnetometer No. 3 was in use, and there was little difficulty in adjusting the observed values to correspond to a gradual decrease of base-line value. Readjustments were made producing change of base-line value on October 31 and November 1, 1903; January 25, August 30, September 1, and October 1, 1904. From the 25th to the 30th of August, 1904, the motion of the magnet was obstructed for at least a portion of each day, and the record for that period has therefore been rejected.

* See Appendix No. 3, Coast and Geodetic Survey Report for 1908.

Horizontal intensity base-line values.

Date.	Observed.	Adopted.	Date.	Observed.	Adopted.	Date.	Observed.	Adopted.
1903.	γ	γ	1903.	γ	γ	1904.	γ	γ
March 27.....	29200	29181	November 13.....	29041	29043	May 2.....	29101	29114
March 30.....	216	178	November 16.....	048	040	May 6.....	125	112
April 3.....	162	175	November 20.....	052	036	May 9.....	103	111
April 6.....	166	173	November 23.....	026	033	May 13.....	115	110
April 10.....	166	169	November 27.....	018	029	May 16.....	119	109
April 13.....	196	167	December 1.....	019	025	May 20.....	104	108
April 17.....	155	163	December 2.....	29027	024	May 23.....	109	107
April 20.....	184	161	December 3.....	28994	023	May 27.....	104	105
April 25.....	152	157	December 4.....	29029	022	May 30.....	111	104
April 27.....	154	155	December 7.....	020	019	June 3.....	098	103
May 1.....	118	151	December 8.....	29001	018	June 6.....	093	102
May 4.....	135	149	December 9.....	28959	017	June 10.....	099	101
May 8.....	147	145	December 11.....	29008	015	June 13.....	095	100
May 11.....	144	143	December 14.....	005	012	June 17.....	097	098
May 15.....	149	139	December 18.....	29004	008	June 20.....	096	097
May 18.....	154	137	December 21.....	28998	005	June 24.....	099	096
May 22.....	143	133	December 25.....	28991	29001	June 27.....	076	095
May 25.....	123	131	December 28.....	29001	28998	July 1.....	094	094
May 29.....	120	127				July 4.....	099	093
June 1.....	132	125	1904.			July 8.....	080	091
June 5.....	115	121	January 1.....	28978	28994	July 11.....	086	090
June 8.....	132	119	January 2.....	991	993	July 15.....	093	089
June 12.....	112	115	January 5.....	28990	990	July 18.....	100	088
June 15.....	120	113	January 8.....	29010	987	July 23.....	077	086
June 19.....	101	109	January 11.....	28996	984	July 25.....	081	085
June 22.....	085	107	January 15.....	971	980	July 29.....	083	084
June 26.....	098	103	January 18.....	974	977	August 12.....	083	080
June 29.....	108	101	January 22.....	958	973	August 15.....	084	079
July 3.....	083	097	January 23.....	28934	28972	August 20.....	079	077
July 6.....	101	095	January 26.....	29140	29180	August 22.....	077	076
July 11.....	114	091	January 27.....	154	180	August 26.....	058	075
July 13.....	099	089	January 28.....	164	179	August 29.....	062	074
July 17.....	084	085	January 29.....	166	179	September 2.....	119	131
July 20.....	084	083	January 30.....	141	178	September 5.....	137	131
July 24.....	062	079	February 1.....	159	178	September 10.....	130	131
July 27.....	104	077	February 2.....	171	177	September 12.....	134	131
August 1.....	044	072	February 4.....	179	175	September 16.....	120	131
August 3.....	073	071	February 5.....	163	174	September 19.....	121	131
August 7.....	061	068	February 8.....	192	172	September 23.....	128	131
August 10.....	070	066	February 12.....	146	171	September 26.....	154	131
August 14.....	057	064	February 15.....	171	169	September 30.....	139	131
August 17.....	004	061	February 19.....	166	166	October 3.....	034	032
August 18.....	071	061	February 22.....	161	163	October 7.....	025	032
August 19.....	070	060	February 26.....	156	160	October 10.....	021	032
August 21.....	058	059	February 29.....	159	157	October 14.....	029	032
August 24.....	004	057	March 4.....	154	154	October 18.....	038	032
August 28.....	046	055	March 7.....	151	151	October 21.....	038	032
August 31.....	045	053	March 12.....	146	148	October 24.....	044	032
September 4.....	089	050	March 14.....	138	145	October 28.....	026	032
September 7.....	058	080	March 15.....	146	141	October 31.....	032	032
September 11.....	029	045	March 16.....	154	139	November 4.....	027	029
September 14.....	021	043	March 17.....	142	138	November 7.....	033	027
September 18.....	026	041	March 18.....	137	137	November 11.....	042	024
September 21.....	024	039	March 25.....	173	137	November 14.....	031	022
September 22.....	063	038	March 28.....	122	136	November 18.....	006	019
September 25.....	026	036	March 29.....	145	135	November 21.....	022	016
September 28.....	061	034	March 31.....	124	133	November 25.....	007	013
October 2.....	047	032	April 1.....	111	130	November 28.....	010	011
October 5.....	027	030	April 4.....	123	127	December 2.....	011	008
October 9.....	009	027	April 8.....	116	124	December 5.....	29010	006
October 12.....	016	026	April 11.....	113	123	December 9.....	28999	003
October 16.....	025	023	April 15.....	134	122	December 12.....	997	29001
October 21.....	002	020	April 18.....	127	121	December 16.....	995	28998
October 23.....	033	019	April 23.....	120	119	December 19.....	989	996
October 26.....	014	017	April 25.....	122	118	December 23.....	994	993
October 30.....	018	014	April 29.....	117	117	December 26.....	987	990
November 2.....	037	054		120	116	December 30.....	989	987
November 6.....	067	050		129	115			
November 9.....	052	047						

DIP.

Dip observations were made once a week with Barrow dip circle No. 1 up to the end of July, 1904. From the beginning of July, 1904, to the end of the year Kew dip circle No. 18 was used. Up to the end of November, 1903, the observations were made in the room in the corner of the fort. During December, 1903, and January, 1904, the observations were made alternately in the fort and in the absolute observatory on the hill, in order to determine the difference in the results at the two stations, and further observations for the same purpose, as well as for the comparison of the two dip circles, were made in July, 1904. For the remainder of 1904 observations were made in the absolute observatory on the hill.

The above comparisons resulted as follows: Dip on hill greater than dip in fort, 15'.2; dip with No. 1 greater than dip with No. 18, 12'.4.

Before being sent to Porto Rico dip circle No. 18 gave results agreeing within the error of observations with the standard earth inductor at Cheltenham. Early in 1905 an earth inductor was sent to Porto Rico and No. 18 was compared with it, the results with needle No. 4 agreeing, but those with needle No. 1 requiring a correction of +3'.6. It is evident that the two needles changed their relation to each other while at Porto Rico, and it is probable that the correction indicated by the comparison in 1905 does not apply to the observations of 1904.

When the observatory was moved to the new site in 1907, it was found that the dip in the absolute observatory there is 23'.7 less than it is at the old site on the hill. The results have therefore been corrected as follows, to reduce them all to the absolute observatory in its present site and approximately to the standard earth inductor at Cheltenham:

Dip circle.	In fort.	On hill.
No. 1.....	-20.9	-36.1
No. 18.....	-8.5	-23.7

It will be seen from the results tabulated below that the errors of observation were large, but the results are sufficiently accurate to determine the secular change in the dip.

Results of dip observations.

49°, plus tabular minutes.

Date.	Dip.	Date.	Dip.	Date.	Dip.	Date.	Dip.
1903.	/	1903.	/	1904.	/	1904.	/
April 6.....	17.2	November 16....	17.6	March 21.....	16.5	July 23.....	14.6
April 13.....	11.5	November 23....	20.0	March 28.....	15.4	July 25.....	16.0
April 20.....	12.8	November 30....	09.9	April 4.....	17.8	July 25.....	13.6
April 27.....	09.1	December 4.....	16.4	April 11.....	17.6	July 26.....	09.6
May 4.....	04.3	December 7.....	16.9	April 18.....	19.4	July 27.....	18.5
May 11.....	12.0	December 9.....	13.4	April 26.....	18.4	July 28.....	11.3
May 18.....	06.2	December 14....	16.6	May 2.....	16.2	July 28.....	16.2
May 25.....	04.4	December 17....	12.4	May 9.....	16.8	July 29.....	15.0
June 1.....	11.7	December 21....	21.6	May 16.....	17.2	July 29.....	12.1
June 8.....	06.1	December 28....	21.8	May 23.....	18.2	August 2.....	13.2
June 15.....	13.8			May 30.....	19.7	August 15.....	10.8
June 22.....	05.2	1904.		June 6.....	15.9	August 22.....	13.0
June 29.....	10.5	January 4.....	16.9	June 13.....	16.1	August 29.....	12.2
July 6.....	10.6	January 11.....	18.6	June 20.....	15.3	September 5...	12.6
July 13.....	10.4	January 18.....	19.8	June 27.....	15.7	September 12...	13.5
July 20.....	05.0	January 21.....	13.5	July 4.....	13.7	September 19...	13.2
July 27.....	11.4	January 22.....	15.1	July 6.....	12.8	September 26...	16.6
August 3.....	09.5	January 25.....	11.6	July 7.....	16.0	October 3.....	14.0
August 10.....	09.8	January 27.....	14.2	July 8.....	12.4	October 14.....	11.0
August 17.....	09.8	January 28.....	19.0	July 9.....	10.6	October 17.....	13.6
August 24.....	15.4	January 30.....	20.2	July 11.....	15.8	October 24.....	17.0
September 7...	12.0	February 1.....	16.1	July 12.....	14.1	October 31.....	14.3
September 14...	18.2	February 2.....	16.8	July 13.....	08.5	November 7....	13.4
September 21...	14.1	February 4.....	17.8	July 14.....	09.2	November 14....	14.6
September 28...	21.1	February 8.....	21.4	July 15.....	11.6	November 21....	12.6
October 5.....	12.6	February 15....	12.7	July 16.....	12.6	November 28....	14.8
October 12.....	13.7	February 22....	12.3	July 18.....	14.4	December 5....	13.0
October 26.....	17.6	February 29....	16.1	July 19.....	13.3	December 12....	11.8
November 2.....	19.6	March 7.....	17.5	July 21.....	14.0	December 19....	12.0
November 9.....	19.4	March 14.....	17.1	July 22.....	11.6	December 28....	09.5

DIURNAL VARIATION.

The following tables show the diurnal variation of D , H , X , and Y for each month from April, 1903, to December, 1904, based on the hourly means of D and H , from the ten least disturbed days of each month, given on the bottom line of the monthly tabulations of the hourly values of D and H . The hours are local mean time counted from midnight. A plus sign indicates an hourly value greater than the mean for the month. As D and Y are considered positive when east, they are negative at the Porto Rico observatory. Consequently in the tables showing the diurnal variation of D and Y a plus sign indicates an hourly value numerically less but algebraically greater than the mean for the day.

Diurnal variation of declination.

1903.

Hour.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	/	/	/	/	/	/	/	/	/	/	/	/
2.....				-0.3	-0.1	-0.3	-0.1	-0.2	-0.2	-0.3	-0.5	-0.1
3.....				-0.2	+0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.6	-0.2
4.....				0.0	+0.1	0.0	-0.1	0.0	0.0	-0.2	-0.6	-0.2
5.....				0.0	+0.3	+0.2	+0.1	+0.2	+0.3	0.0	-0.5	-0.1
6.....				+0.3	+0.5	+0.5	+0.3	+0.5	+0.5	+0.3	-0.5	0.0
7.....				+0.6	+0.9	+1.8	+1.3	+1.8	+1.3	+0.5	-0.3	+0.1
8.....				+1.5	+2.1	+3.5	+2.7	+3.5	+2.7	+1.2	0.0	+0.2
9.....				+1.9	+2.8	+3.5	+3.0	+3.1	+2.7	+2.1	+1.3	+1.2
10.....				+2.2	+2.6	+2.0	+1.7	+1.7	+1.9	+2.0	+2.1	+2.2
11.....				+2.4	+1.7	+0.6	+0.5	+0.6	+0.8	+1.3	+2.1	+2.3
12.....				+1.8	+0.5	-0.6	-0.4	-0.3	-0.3	0.0	+1.3	+1.2
13.....				+0.3	-0.8	-1.3	-1.1	-1.1	-1.4	-0.9	+0.4	-0.3
14.....				-1.0	-1.7	-1.6	-1.5	-1.5	-1.9	-1.0	-0.2	-1.4
15.....				-1.9	-2.2	-1.7	-1.6	-1.8	-1.7	-1.0	-0.7	-1.9
16.....				-2.3	-2.2	-1.7	-1.3	-1.5	-1.4	-1.1	-1.0	-1.8
17.....				-1.7	-1.6	-1.1	-1.0	-0.9	-0.9	-1.0	-1.0	-1.3
18.....				-1.0	-1.0	-0.5	-0.6	-0.4	-0.4	-0.8	-0.8	-0.6
19.....				-0.7	-0.6	-0.4	-0.6	-0.3	-0.3	-0.5	-0.3	-0.1
20.....				-0.4	-0.5	-0.5	-0.4	-0.5	-0.2	-0.3	0.0	+0.2
21.....				-0.4	-0.4	-0.6	-0.4	-0.5	-0.2	-0.1	+0.1	+0.3
22.....				-0.3	-0.3	-0.7	-0.4	-0.5	-0.3	0.0	+0.2	+0.4
23.....				-0.3	-0.3	-0.6	-0.3	-0.4	-0.3	-0.2	0.0	+0.3
24.....				-0.3	-0.2	-0.5	-0.3	-0.3	-0.3	-0.3	-0.2	+0.1
25.....				-0.3	-0.2	-0.4	-0.2	-0.3	-0.3	-0.3	-0.2	0.0

1904.

1.....	-0.1	-0.2	-0.3	-0.3	-0.4	-0.2	-0.2	-0.1	-0.1	-0.1	-0.4	-0.3
2.....	-0.3	-0.2	-0.2	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	-0.5	-0.4
3.....	-0.3	-0.3	-0.1	-0.1	-0.1	0.0	0.0	+0.1	+0.1	-0.2	-0.5	-0.4
4.....	-0.2	-0.3	0.0	0.0	+0.1	+0.2	+0.2	+0.3	+0.3	0.0	-0.2	-0.3
5.....	-0.2	-0.3	+0.1	+0.1	+0.4	+0.6	+0.6	+0.7	+0.6	+0.3	-0.1	-0.1
6.....	+0.1	-0.2	+0.3	+0.5	+1.4	+1.6	+1.7	+2.0	+1.7	+0.5	0.0	0.0
7.....	+0.4	-0.2	+1.1	+1.5	+3.0	+3.3	+3.3	+3.8	+3.1	+1.4	+0.3	+0.1
8.....	+1.9	+1.0	+1.9	+2.1	+3.4	+3.6	+3.5	+3.7	+3.1	+2.1	+1.2	+1.1
9.....	+3.2	+2.2	+2.4	+2.5	+3.0	+2.2	+2.2	+2.1	+2.3	+2.2	+2.1	+2.3
10.....	+2.9	+2.8	+2.0	+2.4	+1.9	+0.9	+0.7	+0.4	+1.1	+1.7	+1.9	+2.4
11.....	+0.7	+2.3	+1.0	+1.9	+0.6	-0.6	-0.7	-1.0	-0.3	+0.6	+1.1	+1.8
12.....	-1.3	+0.9	-0.2	+0.3	-0.6	-1.5	-1.5	-1.9	-1.3	-0.2	+0.2	+0.6
13.....	-2.3	-0.4	-1.2	-1.3	-1.5	-2.0	-1.7	-2.4	-2.0	-0.7	-0.4	-0.7
14.....	-2.4	-1.2	-1.6	-2.1	-2.1	-1.9	-1.7	-2.4	-2.1	-1.4	-1.0	-1.5
15.....	-1.8	-1.5	-1.5	-2.4	-2.0	-1.6	-1.4	-1.9	-1.7	-1.9	-1.3	-1.7
16.....	-1.0	-1.3	-1.2	-1.7	-1.5	-0.9	-1.0	-1.2	-1.3	-1.7	-1.2	-1.4
17.....	-0.3	-1.0	-0.8	-0.8	-0.9	-0.2	-0.6	-0.5	-0.9	-1.3	-0.9	-0.7
18.....	-0.1	-0.6	-0.6	-0.5	-0.5	-0.1	-0.4	-0.3	-0.6	-0.6	-0.5	-0.2
19.....	+0.1	-0.4	-0.5	-0.5	-0.4	-0.2	-0.6	-0.3	-0.4	-0.4	-0.2	-0.1
20.....	+0.1	-0.1	-0.3	-0.5	-0.5	-0.3	-0.7	-0.4	-0.4	-0.2	0.0	0.0
21.....	+0.3	0.0	-0.1	-0.5	-0.6	-0.4	-0.5	-0.4	-0.3	-0.2	0.0	+0.2
22.....	+0.2	0.0	-0.1	-0.3	-0.5	-0.3	-0.3	-0.4	-0.2	-0.1	0.0	+0.1
23.....	0.0	-0.1	-0.1	-0.4	-0.4	-0.3	-0.2	-0.4	-0.2	-0.2	-0.2	-0.1
24.....	-0.1	-0.2	-0.2	-0.4	-0.4	-0.3	-0.2	-0.3	-0.1	-0.2	-0.4	-0.4

Diurnal variation of horizontal intensity.

1903.

Hour.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	<i>I</i>	<i>I</i>	<i>I</i>	<i>I</i>	<i>I</i>	<i>I</i>	<i>I</i>	<i>I</i>	<i>I</i>	<i>I</i>	<i>I</i>	<i>I</i>
1.....				- 4	- 3	- 4	- 6	- 3	- 2	- 1	- 3	- 2
2.....				- 4	- 3	- 4	- 5	- 3	0	- 2	- 3	- 1
3.....				- 4	- 3	- 3	- 4	- 2	+ 1	0	0	0
4.....				- 3	- 2	- 3	- 2	- 1	+ 2	+ 4	0	0
5.....				- 2	- 1	- 3	- 2	0	+ 3	+ 5	+ 2	+ 2
6.....				- 1	+ 1	- 2	+ 1	0	+ 3	+ 6	+ 4	+ 4
7.....				+ 1	+ 2	- 2	+ 3	0	+ 2	+ 8	+ 7	+ 7
8.....				+ 2	+ 1	- 1	+ 5	+ 5	+ 1	+ 9	+ 8	+ 9
9.....				+ 5	+ 5	+ 4	+ 8	+ 14	+ 4	+ 6	+ 8	+ 7
10.....				+ 10	+ 8	+ 12	+ 12	+ 18	+ 7	+ 5	+ 6	+ 4
11.....				+ 11	+ 10	+ 15	+ 13	+ 15	+ 11	+ 5	+ 5	+ 1
12.....				+ 9	+ 10	+ 14	+ 11	+ 11	+ 11	+ 6	+ 2	- 2
13.....				+ 8	+ 7	+ 9	+ 7	+ 6	+ 6	+ 3	- 3	- 4
14.....				+ 8	+ 4	+ 6	+ 4	0	- 1	- 4	- 4	- 5
15.....				+ 4	+ 1	- 1	0	- 7	- 5	- 7	- 5	- 4
16.....				0	- 4	- 7	- 6	- 11	- 7	- 8	- 6	- 3
17.....				- 5	- 5	- 8	- 8	- 12	- 7	- 7	- 6	- 3
18.....				- 5	- 4	- 7	- 8	- 10	- 6	- 5	- 4	- 2
19.....				- 5	- 4	- 4	- 6	- 8	- 6	- 4	- 4	- 3
20.....				- 6	- 4	- 4	- 6	- 6	- 4	- 3	- 3	- 3
21.....				- 5	- 4	- 4	- 6	- 6	- 2	- 4	- 2	- 2
22.....				- 5	- 4	- 4	- 5	- 5	- 2	- 2	- 3	- 1
23.....				- 4	- 4	- 4	- 4	- 4	- 1	- 2	- 2	- 1
24.....				- 4	- 3	- 3	- 3	- 2	0	0	- 1	0

1904.

1.....	- 1	- 3	- 3	- 5	- 2	- 4	- 3	- 3	- 2	- 2	- 2	- 3
2.....	+ 1	- 3	- 3	- 4	- 1	- 2	- 2	- 4	0	- 1	- 2	- 3
3.....	+ 2	- 2	- 3	- 3	+ 1	- 2	- 2	- 3	+ 1	+ 1	- 1	- 1
4.....	+ 2	0	- 2	0	+ 1	- 1	0	- 4	+ 3	+ 1	0	- 1
5.....	+ 3	+ 1	0	+ 1	+ 1	- 1	0	- 2	+ 3	+ 1	+ 1	0
6.....	+ 3	+ 2	0	+ 2	+ 3	+ 1	+ 2	0	+ 2	+ 1	+ 1	+ 1
7.....	+ 7	+ 6	+ 2	+ 3	+ 2	- 1	+ 5	+ 1	+ 1	0	+ 6	+ 6
8.....	+ 9	+ 9	+ 5	+ 5	+ 3	0	+ 7	+ 6	+ 1	+ 2	+ 8	+ 8
9.....	+ 7	+ 9	+ 8	+ 9	+ 6	+ 5	+ 13	+ 12	+ 1	+ 3	+ 8	+ 8
10.....	+ 5	+ 7	+ 8	+ 10	+ 8	+ 12	+ 16	+ 16	+ 2	+ 5	+ 8	+ 7
11.....	+ 5	+ 7	+ 9	+ 9	+ 9	+ 14	+ 16	+ 15	+ 6	+ 5	+ 8	+ 6
12.....	+ 3	+ 6	+ 8	+ 8	+ 9	+ 11	+ 11	+ 11	+ 6	+ 5	+ 4	+ 4
13.....	+ 1	+ 3	+ 6	+ 7	+ 5	+ 7	+ 6	+ 6	+ 3	+ 2	0	- 2
14.....	- 3	+ 1	+ 3	+ 4	+ 3	+ 4	+ 1	+ 1	0	- 3	- 3	- 5
15.....	- 4	- 2	- 1	+ 2	0	- 1	- 5	- 3	- 1	- 5	- 4	- 5
16.....	- 4	- 5	- 3	- 1	- 4	- 5	- 7	- 8	- 2	- 5	- 3	- 2
17.....	- 2	- 6	- 4	- 5	- 7	- 7	- 11	- 10	- 3	- 2	- 4	- 2
18.....	- 4	- 7	- 3	- 5	- 7	- 7	- 9	- 9	- 2	- 1	- 3	- 3
19.....	- 5	- 6	- 3	- 7	- 6	- 5	- 8	- 8	- 1	- 1	- 3	- 3
20.....	- 5	- 5	- 3	- 6	- 4	- 5	- 7	- 7	- 1	- 1	- 2	- 3
21.....	- 5	- 5	- 3	- 7	- 4	- 5	- 7	- 6	- 1	- 2	- 3	- 3
22.....	- 4	- 5	- 3	- 7	- 3	- 4	- 6	- 4	- 2	- 3	- 3	- 3
23.....	- 2	- 4	- 3	- 5	- 2	- 3	- 5	- 4	- 2	- 2	- 3	- 3
24.....	- 1	- 3	- 2	- 4	- 2	- 2	- 4	- 3	- 2	- 2	- 3	- 2

Diurnal variation of X.

1903.

Hour.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
1.....				- 4	- 3	- 4	- 6	- 3	- 2	- 1	- 3	- 2
2.....				- 4	- 3	- 4	- 5	- 3	0	- 2	- 3	- 1
3.....				- 4	- 3	- 3	- 4	- 2	+ 1	0	0	0
4.....				- 3	- 2	- 3	- 2	- 1	+ 2	+ 4	0	0
5.....				- 2	- 1	- 3	- 2	0	+ 3	+ 5	+ 2	+ 2
6.....				- 1	+ 1	- 2	+ 1	0	+ 3	+ 6	+ 4	+ 4
7.....				+ 1	+ 2	- 1	+ 4	+ 1	+ 3	+ 8	+ 7	+ 7
8.....				+ 2	+ 2	0	+ 6	+ 6	+ 2	+ 9	+ 8	+ 9
9.....				+ 5	+ 6	+ 4	+ 8	+ 14	+ 4	+ 6	+ 8	+ 7
10.....				+ 11	+ 8	+ 12	+ 12	+ 18	+ 7	+ 5	+ 6	+ 5
11.....				+ 11	+ 10	+ 15	+ 13	+ 15	+ 11	+ 5	+ 5	+ 1
12.....				+ 9	+ 10	+ 14	+ 11	+ 11	+ 11	+ 6	+ 2	- 2
13.....				+ 8	+ 7	+ 9	+ 7	+ 6	+ 6	+ 3	- 3	- 4
14.....				+ 8	+ 4	+ 6	+ 4	0	- 1	- 4	- 4	- 5
15.....				+ 3	+ 1	- 1	0	- 7	- 5	- 7	- 5	- 4
16.....				0	- 4	- 7	- 6	- 11	- 7	- 8	- 6	- 3
17.....				- 5	- 5	- 8	- 8	- 12	- 7	- 7	- 6	- 3
18.....				- 5	- 4	- 7	- 8	- 10	- 6	- 5	- 4	- 2
19.....				- 5	- 4	- 4	- 6	- 8	- 6	- 4	- 4	- 3
20.....				- 6	- 4	- 4	- 6	- 6	- 4	- 3	- 3	- 3
21.....				- 5	- 4	- 4	- 6	- 6	- 2	- 4	- 2	- 2
22.....				- 5	- 4	- 4	- 5	- 5	- 2	- 2	- 3	- 1
23.....				- 4	- 4	- 4	- 4	- 4	- 1	- 2	- 2	- 1
24.....				- 4	- 3	- 3	- 3	- 2	0	0	- 1	0

1904.

1.....	- 1	- 3	- 3	- 5	- 2	- 4	- 3	- 3	- 2	- 2	- 2	- 3
2.....	+ 1	- 3	- 3	- 4	- 1	- 2	- 2	- 4	0	- 1	- 2	- 3
3.....	+ 2	- 2	- 3	- 3	+ 1	- 2	- 2	- 3	+ 1	+ 1	- 1	- 1
4.....	+ 2	0	- 2	0	+ 1	- 1	0	- 4	+ 3	+ 1	0	- 1
5.....	+ 3	+ 1	0	+ 1	+ 1	- 1	0	- 2	+ 3	+ 1	+ 1	0
6.....	+ 3	+ 2	0	+ 2	+ 3	+ 1	+ 2	0	+ 2	+ 1	+ 1	+ 1
7.....	+ 7	+ 6	+ 2	+ 3	+ 3	0	+ 6	+ 2	+ 2	0	+ 6	+ 6
8.....	+ 9	+ 9	+ 5	+ 5	+ 4	+ 1	+ 8	+ 7	+ 2	+ 2	+ 8	+ 8
9.....	+ 8	+ 9	+ 9	+ 10	+ 7	+ 5	+ 13	+ 12	+ 2	+ 3	+ 8	+ 9
10.....	+ 6	+ 8	+ 8	+ 11	+ 8	+ 12	+ 16	+ 16	+ 2	+ 5	+ 8	+ 8
11.....	+ 5	+ 8	+ 9	+ 9	+ 9	+ 14	+ 16	+ 15	+ 6	+ 5	+ 8	+ 6
12.....	+ 3	+ 6	+ 8	+ 8	+ 9	+ 11	+ 11	+ 11	+ 6	+ 5	+ 4	+ 4
13.....	0	+ 3	+ 6	+ 7	+ 5	+ 7	+ 6	+ 6	+ 3	+ 2	0	- 2
14.....	- 4	+ 1	+ 3	+ 4	+ 3	+ 4	+ 1	+ 1	0	- 3	- 3	- 5
15.....	- 4	- 2	- 1	+ 1	0	- 1	- 5	- 3	- 1	- 5	- 4	- 5
16.....	- 4	- 5	- 3	- 1	- 4	- 5	- 7	- 8	- 2	- 5	- 3	- 2
17.....	- 2	- 6	- 4	- 5	- 7	- 7	- 11	- 10	- 3	- 2	- 4	- 2
18.....	- 4	- 7	- 3	- 5	- 7	- 7	- 9	- 9	- 2	- 1	- 3	- 3
19.....	- 5	- 6	- 3	- 7	- 6	- 5	- 8	- 8	- 1	- 1	- 3	- 3
20.....	- 5	- 5	- 3	- 6	- 4	- 5	- 7	- 7	- 1	- 1	- 2	- 3
21.....	- 5	- 5	- 3	- 7	- 4	- 5	- 7	- 6	- 1	- 2	- 3	- 3
22.....	- 4	- 5	- 3	- 7	- 3	- 4	- 6	- 4	- 2	- 3	- 3	- 3
23.....	- 2	- 4	- 3	- 5	- 2	- 3	- 5	- 4	- 2	- 2	- 3	- 3
24.....	- 1	- 3	- 2	- 4	- 2	- 2	- 4	- 3	- 2	- 2	- 3	- 2

Diurnal variation of Y.

1903.

Hour.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1.....				- 3	- 1	- 3	- 1	- 2	- 2	- 3	- 4	- 1
2.....				- 2	+ 1	- 1	- 1	- 2	- 2	- 3	- 5	- 2
3.....				0	+ 1	0	- 1	0	0	- 2	- 5	- 2
4.....				0	+ 3	+ 2	+ 1	+ 2	+ 3	0	- 4	- 1
5.....				+ 3	+ 4	+ 4	+ 3	+ 4	+ 4	+ 3	- 4	0
6.....				+ 5	+ 8	+15	+11	+15	+11	+ 4	- 3	+ 1
7.....				+13	+18	+30	+23	+30	+23	+10	0	+ 2
8.....				+16	+24	+30	+26	+26	+23	+18	+11	+10
9.....				+19	+22	+17	+14	+14	+16	+17	+18	+19
10.....				+20	+14	+ 5	+ 4	+ 5	+ 7	+11	+18	+20
11.....				+15	+ 4	- 5	- 3	- 3	- 3	0	+11	+10
12.....				+ 3	- 7	-11	- 9	- 9	-12	- 8	+ 3	- 3
13.....				- 8	-14	-14	-13	-13	-16	- 8	- 2	-12
14.....				-16	-19	-14	-14	-15	-14	- 9	- 6	-16
15.....				-20	-19	-14	-11	-13	-12	- 9	- 8	-15
16.....				-14	-14	- 9	- 8	- 8	- 8	- 8	- 8	-11
17.....				- 8	- 8	- 4	- 5	- 3	- 3	- 7	- 7	- 5
18.....				- 6	- 5	- 3	- 5	- 3	- 3	- 4	- 3	- 1
19.....				- 3	- 4	- 4	- 3	- 4	- 2	- 3	0	+ 2
20.....				- 3	- 3	- 5	- 3	- 4	- 2	- 1	+ 1	+ 3
21.....				- 3	- 3	- 6	- 3	- 4	- 3	0	+ 2	+ 3
22.....				- 3	- 3	- 5	- 3	- 3	- 3	- 2	0	+ 1
23.....				- 3	- 2	- 4	- 3	- 3	- 3	- 3	- 2	+ 0
24.....				- 3	- 2	- 3	- 2	- 3	- 3	- 3	- 2	3

1904.

1.....	- 1	- 2	- 3	- 3	- 3	- 2	- 2	- 1	- 1	- 1	- 3	- 3
2.....	- 3	- 2	- 2	- 3	- 3	- 2	- 2	- 1	- 1	- 1	- 4	- 3
3.....	- 3	- 3	- 1	- 1	- 1	0	0	+ 1	+ 1	- 2	- 4	- 3
4.....	- 2	- 3	0	0	+ 1	+ 2	+ 2	+ 3	+ 3	0	- 2	- 3
5.....	- 2	- 3	+ 1	+ 1	+ 3	+ 5	+ 5	+ 6	+ 5	+ 3	- 1	- 1
6.....	+ 1	- 2	0	+ 4	+12	+14	+14	+17	+14	+ 4	0	0
7.....	+ 3	- 2	+ 9	+13	+26	+28	+28	+32	+26	+12	+ 3	+ 1
8.....	+16	+ 8	+16	+18	+29	+31	+30	+32	+26	+18	+10	+ 9
9.....	+27	+19	+20	+21	+26	+19	+19	+18	+20	+19	+18	+20
10.....	+25	+24	+17	+20	+16	+ 8	+ 6	+ 3	+ 9	+14	+16	+20
11.....	+ 6	+20	+ 8	+16	+ 5	- 5	- 6	- 8	- 3	+ 5	+ 9	+15
12.....	-11	+ 8	- 2	+ 3	- 5	-13	-13	-16	-11	- 2	+ 2	+ 5
13.....	-20	- 3	-10	-11	-13	-17	-14	-20	-17	- 6	- 3	- 6
14.....	-20	-10	-14	-18	-18	-16	-14	-20	-18	-12	- 8	-13
15.....	-15	-13	-13	-20	-17	-14	-12	-16	-14	-16	-11	-14
16.....	- 8	-11	-10	-14	-13	- 8	- 8	-10	-11	-14	-10	-12
17.....	- 3	- 8	- 7	- 7	- 8	- 2	- 5	- 4	- 8	-11	- 8	- 6
18.....	- 1	- 5	- 5	- 4	- 4	- 1	- 3	- 3	- 5	- 5	- 4	- 2
19.....	+ 1	- 3	- 4	- 4	- 3	- 2	- 5	- 3	- 3	- 3	- 2	- 1
20.....	+ 1	- 1	- 3	- 4	- 4	- 3	- 6	- 3	- 3	- 2	0	0
21.....	+ 3	0	- 1	- 4	- 5	- 3	- 4	- 3	- 3	- 2	0	+ 2
22.....	+ 2	0	- 1	- 3	- 4	- 3	- 3	- 3	- 2	- 1	0	+ 1
23.....	0	- 1	- 1	- 3	- 3	- 3	- 2	- 3	- 2	- 2	- 2	- 1
24.....	- 1	- 2	- 2	- 3	- 3	- 3	- 2	- 3	- 1	- 2	- 3	- 3

DAILY RANGE OF DECLINATION.

The following table contains the extreme values of declination for each day together with the times of occurrence.

Daily range of declination.

1° West, plus tabular minutes.

Day.	April, 1903.				May, 1903.				June, 1903.			
	E. extreme.		W. extreme.		E. extreme.		W. extreme.		E. extreme.		W. extreme.	
	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.
	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>
1.....	9 33	19.4	15 04	24.7	9 38	18.4	14 33	25.7	8 07	18.5	15 10	23.0
2.....	10 00	20.6	14 38	25.9	7 33	18.6	14 57	24.5	6 50	18.5	14 00	24.0
3.....	10 00	19.9	15 45	25.6	10 57	18.3	15 27	24.3	7 00	20.1	10 53	23.7
4.....	7 50	21.0	15 47	24.5	9 00	20.6	16 05	23.0	7 00	19.3	11 00	23.9
5.....	22 42	18.4	15 20	25.1	7 00	18.5	14 00	23.3	7 00	20.6	9 46	24.3
6.....	0 15	18.3	8 24	29.2	10 00	18.9	14 06	23.4	6 47	19.0	11 28	24.9
7.....	6 00	22.3	9 17	24.7	7 17	18.8	14 10	24.8	7 00	18.8	13 11	24.9
8.....	9 30	21.2	14 25	26.4	7 25	19.4	13 23	25.3	7 23	18.7	15 00	23.4
9.....	10 32	18.6	15 43	23.9	8 17	17.4	12 27	24.8	7 10	17.9	13 00	24.8
10.....	8 41	18.6	13 51	25.2	7 46	18.4	12 43	26.2	7 13	18.7	13 52	25.2
11.....	9 53	19.5	13 30	25.6	8 27	18.5	15 00	24.9	7 32	19.9	13 27	25.0
12.....	10 00	19.4	14 20	24.5	8 26	18.8	13 00	24.6	8 00	18.1	12 16	25.1
13.....	8 00	20.3	14 05	24.5	8 00	19.4	14 14	26.6	8 00	17.9	15 27	23.9
14.....	7 35	19.8	14 00	25.9	8 00	20.3	14 36	23.9	8 33	19.2	13 20	25.1
15.....	10 12	19.3	14 55	25.2	8 27	19.9	14 37	24.2	7 47	20.1	14 30	25.6
16.....	8 00	21.2	14 04	24.4	9 47	19.8	15 22	23.6	7 36	19.7	13 00	26.2
17.....	7 00	21.5	14 13	26.2	8 00	19.8	15 34	24.7	7 15	19.7	14 23	25.0
18.....	9 45	20.5	16 12	24.6	8 27	18.6	14 42	24.1	7 43	17.7	12 58	24.5
19.....	10 18	19.6	14 43	24.5	8 00	19.0	13 31	25.4	7 41	19.0	11 52	24.2
20.....	8 41	20.7	14 22	24.3	8 00	18.2	13 38	25.2	8 00	20.2	11 50	25.5
21.....	9 00	19.5	15 07	24.3	8 20	17.8	14 48	25.6	7 30	20.1	10 37	24.0
22.....	7 17	20.3	13 37	24.5	7 45	18.5	13 50	23.2	8 00	19.8	12 00	24.2
23.....	7 33	19.3	14 32	25.9	7 25	18.0	11 10	25.2	7 00	18.3	11 43	24.9
24.....	10 24	19.5	15 00	24.0	7 40	18.7	15 18	25.3	6 55	18.2	13 26	24.8
25.....	8 00	20.6	14 28	24.9	7 40	17.9	13 38	24.1	7 00	18.6	11 30	24.7
26.....	10 54	18.2	15 17	25.6	7 44	18.4	13 57	23.4	7 37	16.0	12 00	26.9
27.....	6 37	20.3	14. 43	24.7	8 00	18.7	13 12	24.8	8 00	18.4	14 13	24.4
28.....	9 27	18.9	14 28	25.3	8 00	18.8	14 00	24.8	8 00	17.7	12 43	25.7
29.....	6 38	19.9	14 25	23.9	9 26	19.8	13 51	25.7	21 55	19.3	14 48	23.9
30.....	9 05	19.0	14 55	25.0	9 00	19.6	14 25	24.8	8 00	20.0	14 08	25.7
31.....					8 00	20.4	13 07	25.1				

Day.	July, 1903.				August, 1903.				September, 1903.			
	E. extreme.		W. extreme.		E. extreme.		W. extreme.		E. extreme.		W. extreme.	
	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.
	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>
1.....	8 00	20.6	12 27	24.4	8 00	20.7	11 00	26.5	6 52	21.0	13 13	27.2
2.....	7 37	19.8	14 22	24.4	7 43	19.8	11 37	25.2	7 00	21.4	15 00	26.9
3.....	8 00	21.2	14 00	24.5	7 00	20.5	10 14	27.3	7 00	20.3	17 00	26.7
4.....	7 52	20.0	13 32	25.7	7 35	18.8	14 00	25.9	6 37	21.0	12 00	28.7
5.....	8 00	19.3	11 45	25.3	7 00	19.9	15 54	25.7	7 00	19.3	13 28	26.9
6.....	7 41	18.7	11 56	26.7	7 34	19.2	14 09	26.3	7 00	20.1	12 00	26.1
7.....	7 32	19.1	13 00	27.3	7 28	20.1	13 46	25.3	8 00	19.9	13 36	26.8
8.....	8 00	18.9	13 12	26.4	7 45	19.7	12 27	26.7	7 29	19.5	13 34	27.4
9.....	7 27	19.6	11 58	25.2	7 32	18.5	12 17	26.7	7 26	20.2	13 33	27.8
10.....	8 00	18.9	13 24	26.6	7 00	21.5	14 00	26.3	8 00	20.3	13 50	27.2
11.....	8 00	19.2	14 08	26.2	8 42	19.1	13 52	26.0	8 00	20.7	13 00	27.3
12.....	8 22	20.3	13 32	24.9	7 28	19.7	14 21	27.7	7 15	21.7	13 00	27.2
13.....	9 00	19.4	14 00	26.1	8 00	19.6	14 07	25.4	8 00	22.0	13 15	26.8
14.....	8 42	20.0	16 00	26.0	7 30	19.7	15 06	27.4	7 16	22.6	14 16	27.3
15.....	8 00	19.8	12 38	24.9	8 00	20.6	14 35	25.8	8 00	21.7	14 00	27.7
16.....	8 00	19.8	14 21	28.0	7 18	20.0	15 05	26.8	8 00	22.3	12 30	26.3
17.....	8 00	20.0	16 00	25.3	6 30	22.6	15 53	25.3	8 00	22.9	12 36	27.2
18.....	8 00	20.0	15 33	25.6	7 00	20.9	10 53	25.0	7 21	23.1	12 11	28.0
19.....	8 00	21.1	16 09	25.7	7 00	21.4	13 00	26.3	8 51	21.2	12 32	29.0
20.....	7 37	17.9	20 00	24.4	7 25	21.4	12 43	26.8	6 28	21.7	12 21	27.7
21.....	7 00	21.1	13 00	24.4	7 00	19.0	15 00	25.1	8 00	21.8	12 24	27.7
22.....	7 00	20.8	13 54	25.9	6 53	20.3	0 50	28.2	7 00	21.3	13 00	28.4
23.....	7 28	20.2	12 29	24.4	7 25	20.1	13 00	26.3	8 29	21.3	14 23	27.5
24.....	7 37	19.6	13 28	25.7	7 00	19.5	13 37	26.2	8 00	23.2	14 00	26.8
25.....	7 00	19.0	13 00	26.8	7 13	20.3	13 32	25.5	8 00	23.9	13 00	27.5
26.....	8 08	19.5	14 26	26.9	7 00	21.4	13 43	25.9	8 00	22.4	14 27	26.5
27.....	8 11	18.5	12 30	26.1	7 29	20.8	2 16	24.6	8 34	22.6	14 48	26.3
28.....	7 51	19.9	14 40	25.6	7 00	21.4	14 27	26.1	9 00	22.9	15 00	26.7
29.....	6 52	20.9	13 29	25.6	8 00	20.6	14 00	26.9	7 46	23.7	4 00	26.5
30.....	7 35	20.7	13 13	25.0	7 15	20.4	12 38	25.7	8 00	24.1	24 00	26.0
31.....	6 27	21.7	2 45	24.9	7 00	21.3	13 12	25.0				

Daily range of declination—Continued.

1° West, plus tabular minutes.

Day.	October, 1903.				November, 1903.				December, 1903.			
	E. extreme.		W. extreme.		E. extreme.		W. extreme.		E. extreme.		W. extreme.	
	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.
	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>
1.....	7 00	24.3	17 00	26.0	8 46	22.6	15 00	28.1	9 00	25.2	13 37	28.7
2.....	8 00	23.1	12 00	27.9	7 00	25.9	13 18	29.2	2 37	25.2	16 21	27.9
3.....	9 00	23.7	16 00	26.6	8 00	25.1	2 00	28.9	9 00	25.8	13 14	29.5
4.....	8 00	23.1	12 18	28.7	9 00	23.1	2 44	29.1	9 26	23.9	16 22	29.5
5.....	8 00	22.7	12 40	27.2	8 46	23.4	12 21	28.6	9 00	25.4	14 06	29.4
6.....	8 48	22.4	13 00	28.0	9 00	23.4	3 11	27.7	10 28	24.1	2 00	29.1
7.....	8 00	23.5	3 22	27.2	8 00	24.3	14 00	28.6	8 36	25.2	13 29	29.5
8.....	8 00	22.1	14 14	27.4	8 00	23.9	14 15	29.0	9 25	23.5	15 10	28.9
9.....	9 24	21.8	15 36	28.0	9 00	23.9	13 46	29.0	9 50	24.7	15 18	29.4
10.....	9 00	23.9	14 00	27.9	9 00	23.9	2 11	28.0	10 00	23.8	14 37	30.2
11.....	9 26	23.4	14 41	27.4	10 00	23.5	15 24	28.6	9 00	24.8	15 00	29.8
12.....	8 00	24.4	15 46	30.5	8 56	23.6	15 30	28.1	10 00	23.8	14 00	29.8
13.....	18 54	23.4	0 48	28.4	9 34	23.2	16 51	27.8	8 34	24.9	16 22	32.5
14.....	17 35	24.8	5 00	27.8	9 31	23.6	16 00	27.1	10 00	26.1	13 32	29.7
15.....	12 00	25.6	16 00	26.9	10 08	23.4	17 00	27.4	9 00	25.8	14 38	29.5
16.....	9 00	24.9	16 00	27.1	9 00	24.2	14 09	28.7	10 00	25.4	15 00	28.5
17.....	.....	.....	.....	.....	8 00	25.4	13 00	28.3	10 00	25.8	15 50	28.8
18.....	.....	.....	.....	.....	21 47	23.4	12 36	27.7	19 00	27.6	13 42	30.0
19.....	.....	.....	.....	.....	9 00	26.0	3 42	28.7	19 00	27.3	14 00	30.0
20.....	9 00	23.0	12 00	27.5	9 00	26.3	12 00	28.6	.....	.....	.....	.....
21.....	8 00	24.8	11 36	27.2	9 29	24.5	1 49	27.8	.....	.....	.....	.....
22.....	8 26	23.3	14 00	28.1	9 54	24.5	4 56	29.3	.....	.....	.....	.....
23.....	8 43	23.9	15 32	27.6	9 36	24.5	2 25	28.3	.....	.....	.....	.....
24.....	8 32	23.8	15 00	28.1	9 00	25.1	14 45	28.5	9 24	25.6	13 39	30.4
25.....	10 19	23.3	6 18	27.6	9 24	24.9	15 00	28.1	9 00	23.5	14 00	29.3
26.....	8 28	25.0	15 50	28.8	10 22	23.6	5 00	27.6	9 00	25.7	14 34	29.4
27.....	9 00	24.5	3 48	28.6	10 00	24.9	15 36	28.8	9 39	23.1	14 26	29.2
28.....	10 00	24.5	16 30	27.7	10 16	24.3	15 00	28.1	9 47	23.1	14 40	30.1
29.....	10 00	25.0	16 21	28.1	10 00	25.4	17 00	27.7	11 00	25.2	15 00	28.1
30.....	9 00	24.4	15 06	28.6	10 09	24.9	14 00	28.4	10 17	22.6	6 51	30.5
31.....	9 15	19.6	6 12	43.1	.....	.....	.....	.....	9 43	25.2	2 20	29.3

Day.	January, 1904.				February, 1904.				March, 1904.			
	E. extreme.		W. extreme.		E. extreme.		W. extreme.		E. extreme.		W. extreme.	
	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.
	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>
1.....	9 40	24.5	0 41	30.4	9 24	25.3	3 17	30.1	9 00	27.7	14 00	30.0
2.....	9 00	24.7	14 21	28.9	10 00	26.2	5 00	29.7	10 00	26.8	15 00	30.7
3.....	9 15	24.5	14 46	29.8	10 00	24.7	14 00	31.2	10 10	26.4	14 22	31.7
4.....	9 50	24.9	2 28	29.7	9 21	24.7	13 42	31.1	8 49	25.8	14 40	32.2
5.....	8 39	24.9	0 15	29.7	9 35	25.2	13 26	30.7	9 40	26.5	15 39	30.9
6.....	9 29	24.9	3 43	28.9	10 32	24.6	15 16	31.0	10 00	26.7	16 00	30.9
7.....	9 00	24.9	13 00	30.5	9 43	25.2	14 34	30.1	11 33	26.5	15 00	30.9
8.....	9 00	23.9	14 00	29.8	10 20	25.8	16 00	30.5	12 00	27.0	3 42	29.8
9.....	9 00	23.9	13 47	31.8	11 04	25.7	16 30	29.8	10 00	27.0	15 00	30.1
10.....	9 00	23.3	14 16	30.5	10 00	26.5	16 27	29.7	9 28	26.4	14 29	30.2
11.....	9 00	26.1	14 46	32.2	11 00	25.9	16 28	30.5	8 43	26.8	17 00	29.8
12.....	9 36	23.2	14 00	31.2	10 00	26.0	16 00	30.6	9 34	28.5	14 00	30.4
13.....	9 42	23.0	14 00	30.7	10 34	26.3	17 00	28.8	9 00	26.9	14 00	30.5
14.....	9 15	23.5	12 36	30.4	9 00	26.2	13 00	29.9	8 00	27.4	13 19	31.8
15.....	9 29	23.7	21 00	30.2	9 47	26.5	23 57	30.3	9 00	24.9	13 25	31.4
16.....	10 54	26.3	13 07	29.6	10 00	24.3	13 32	31.0	9 00	27.2	13 20	31.5
17.....	9 45	25.1	13 00	29.3	10 00	25.9	16 19	31.0	9 00	23.9	13 43	31.4
18.....	9 00	24.2	13 27	29.7	10 00	24.3	15 00	30.3	8 00	26.3	14 00	31.5
19.....	9 00	24.9	13 34	31.1	9 45	24.7	14 21	30.2	8 16	26.6	14 00	31.6
20.....	9 43	25.2	12 10	31.3	10 18	24.8	15 00	30.1	8 46	27.1	14 14	31.9
21.....	10 00	25.1	16 28	29.5	10 39	24.6	15 00	30.9	9 00	27.0	16 00	30.7
22.....	9 33	25.3	13 26	33.2	10 21	26.4	15 09	31.2	9 17	27.0	15 07	30.2
23.....	9 00	24.0	13 19	30.9	10 33	25.0	16 00	29.4	9 24	26.6	16 05	31.0
24.....	10 16	24.8	13 41	32.0	10 00	26.6	15 00	30.5	9 00	25.8	16 00	31.8
25.....	10 00	24.3	13 40	30.4	10 00	27.1	15 00	29.7	9 09	27.9	15 21	31.7
26.....	10 00	24.6	13 48	31.5	10 22	25.9	15 00	30.1	8 46	26.3	14 00	30.6
27.....	10 20	24.5	13 47	28.9	10 50	26.9	15 00	29.6	9 18	28.1	15 00	31.3
28.....	10 00	23.6	14 45	31.0	9 37	27.6	15 00	30.8	9 00	26.0	14 14	32.3
29.....	10 00	25.5	5 14	30.6	9 25	26.2	15 00	29.6	9 00	25.9	13 34	32.1
30.....	10 13	24.2	14 00	29.3	.....	.....	.....	.....	7 53	26.4	13 55	32.8
31.....	9 44	25.4	13 00	30.3	.....	.....	.....	.....	9 15	26.0	14 00	32.2

Daily range of declination—Continued.

1° West, plus tabular minutes.

Day.	April, 1904.				May, 1904.				June, 1904.			
	E. extreme.		W. extreme.		E. extreme.		W. extreme.		E. extreme.		W. extreme.	
	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.
	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>
1.....	8 42	25.3	15 00	34.0	8 30	26.4	13 44	33.0	8 00	27.5	14 26	32.9
2.....	7 10	26.2	13 55	33.1	8 41	26.8	14 20	33.5	8 00	26.8	14 00	32.9
3.....	9 00	25.3	15 00	34.7	7 41	26.8	14 16	33.4	8 00	28.4	15 00	33.6
4.....	9 00	26.4	15 33	33.1	9 31	28.1	15 00	34.5	8 00	25.8	14 00	33.4
5.....	11 00	25.7	15 14	32.2	7 00	29.1	15 00	32.1	8 00	28.8	16 00	31.3
6.....	9 26	27.1	14 44	33.7	7 21	28.3	14 00	31.3	7 34	28.9	14 00	33.0
7.....	10 00	24.3	15 35	32.3	8 00	27.6	14 00	31.7	7 27	29.1	14 00	32.5
8.....	9 00	26.5	14 50	32.8	7 00	26.9	16 08	32.1	8 14	27.4	13 14	33.4
9.....	10 00	26.4	13 39	32.3	8 15	25.2	15 00	33.2	8 00	28.2	12 00	33.4
10.....	8 00	27.6	15 20	32.1	8 00	27.6	15 00	32.2	7 37	27.4	14 00	33.2
11.....	9 49	25.7	15 00	32.2	7 00	27.6	14 00	32.1	7 07	27.6	14 00	33.9
12.....	9 20	26.0	14 00	30.8	7 43	26.2	15 09	32.4	8 00	26.0	14 00	34.1
13.....	10 00	26.6	15 00	32.3	7 00	26.6	14 00	33.1	8 00	25.1	13 00	33.9
14.....	9 00	26.9	15 00	31.0	8 00	26.4	14 08	35.1	7 44	26.1	15 22	32.4
15.....	10 00	25.0	15 00	31.9	7 00	25.9	14 16	33.1	8 13	25.2	13 21	33.9
16.....	9 00	26.2	14 41	32.9	7 49	25.8	15 37	33.9	9 49	28.3	4 50	34.5
17.....	10 00	25.9	15 10	33.9	8 00	25.5	14 49	35.7	8 52	28.2	16 00	33.6
18.....	8 40	25.4	15 00	34.0	9 00	25.1	15 13	33.8	7 00	27.9	16 00	32.4
19.....	11 39	26.5	7 00	31.0	8 36	26.9	15 30	32.4	8 00	28.2	13 40	32.8
20.....	7 00	28.4	15 29	31.4	8 00	28.2	15 00	31.8	7 17	28.1	15 00	32.2
21.....	11 00	25.8	16 00	32.0	8 00	28.2	15 00	31.4	8 00	28.3	14 26	32.8
22.....	9 38	27.8	15 14	33.6	8 40	28.0	13 19	31.8	8 00	27.5	14 09	32.4
23.....	10 11	27.9	15 37	32.1	7 00	28.4	15 39	31.5	7 00	27.5	11 33	32.9
24.....	9 00	27.7	15 00	31.1	7 20	28.2	15 00	30.9	7 23	26.8	11 47	35.8
25.....	7 00	29.1	14 00	31.1	6 43	28.6	11 00	31.8	7 00	26.3	11 42	32.5
26.....	6 33	28.1	14 29	34.1	7 00	28.6	9 32	31.4	7 00	26.3	13 00	33.0
27.....	7 00	29.1	13 00	32.9	7 00	27.3	12 00	33.1	7 00	25.3	13 00	34.7
28.....	7 00	27.3	14 35	32.1	8 00	23.2	14 16	34.7	8 00	28.4	12 29	33.0
29.....	6 32	27.7	14 13	33.6	8 00	23.2	13 40	32.9	7 00	28.0	13 38	35.4
30.....	8 22	27.1	14 24	33.0	8 00	26.6	13 39	33.8	8 00	27.5	15 00	33.8
31.....					8 00	28.4	15 44	32.6				

Day.	July, 1904.				August, 1904.				September, 1904.			
	E. extreme.		W. extreme.		E. extreme.		W. extreme.		E. extreme.		W. extreme.	
	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.
	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>
1.....	9 11	26.0	13 57	33.3	7 00	28.0	15 00	33.4	7 22	28.6	14 00	34.4
2.....	7 16	28.3	14 00	33.5	7 00	28.5	12 00	33.4	7 00	28.5	14 00	34.3
3.....	8 00	26.7	14 00	32.9	9 37	26.7	14 09	33.7	6 37	29.7	13 00	33.1
4.....	7 38	28.8	15 46	33.2	7 08	27.1	15 00	33.9	7 34	29.7	16 25	34.6
5.....	8 00	28.1	13 54	34.4	8 00	28.5	14 33	32.8	- - -	- - -	- - -	- - -
6.....	8 00	29.6	16 45	34.9	7 00	28.1	11 00	36.3	- - -	- - -	- - -	- - -
7.....	7 00	29.0	12 45	34.4	8 00	27.6	13 00	34.2	- - -	- - -	- - -	- - -
8.....	8 00	28.5	15 00	33.4	7 19	27.5	14 00	34.3	- - -	- - -	- - -	- - -
9.....	7 27	28.8	13 00	34.0	7 25	26.3	11 23	35.5	7 00	- - -	- - -	- - -
10.....	7 35	26.7	13 00	34.4	7 13	26.6	12 00	33.4	7 00	30.9	13 00	37.5
11.....	7 35	27.1	12 35	34.0	7 00	27.8	11 21	34.8	7 43	28.4	13 00	38.0
12.....	8 00	27.1	13 20	34.3	7 13	26.0	12 32	34.4	8 46	28.0	14 00	36.2
13.....	8 11	27.1	15 00	33.3	7 24	25.8	12 25	36.4	7 00	29.2	13 34	36.7
14.....	6 22	29.6	13 27	33.8	7 12	26.4	13 55	34.4	7 48	28.3	14 00	35.7
15.....	7 00	28.0	15 00	33.7	7 27	25.4	14 35	34.3	7 20	30.4	14 00	34.6
16.....	6 32	29.7	15 26	32.9	8 00	26.9	14 44	34.2	7 00	29.2	13 31	34.7
17.....	8 22	27.3	12 24	33.3	7 31	28.5	15 18	34.1	7 00	29.6	13 20	35.0
18.....	8 00	27.8	15 00	32.6	7 22	29.0	16 23	32.9	7 00	28.8	13 46	34.2
19.....	8 00	28.0	15 00	31.7	7 24	28.9	12 52	33.7	7 00	29.7	14 00	35.3
20.....	8 00	27.2	15 00	32.9	7 20	27.6	11 00	33.7	7 00	29.9	13 24	35.9
21.....	8 00	26.8	12 00	32.5	7 44	26.5	13 36	36.1	7 31	29.1	15 53	33.8
22.....	7 00	28.5	11 28	32.0	7 17	27.7	12 00	35.7	7 00	29.0	11 44	35.2
23.....	6 19	30.3	11 52	32.3	7 17	27.0	13 46	35.4	7 00	28.6	12 00	36.8
24.....	7 00	26.8	12 00	33.9	7 18	27.7	14 00	33.2	7 30	29.0	13 00	34.5
25.....	7 30	27.0	13 16	34.0	7 40	28.0	13 00	36.2	7 34	29.9	14 29	33.9
26.....	7 00	26.8	15 20	33.6	7 19	26.2	13 32	35.8	8 43	29.9	14 00	35.7
27.....	7 39	26.1	11 22	32.2	7 46	25.9	13 00	37.0	8 00	27.6	14 00	35.5
28.....	7 50	26.7	14 05	32.2	7 36	27.3	13 20	34.3	8 39	28.1	17 00	33.7
29.....	7 30	27.4	16 00	32.0	7 00	27.8	12 00	35.4	8 38	31.6	13 00	34.6
30.....	8 00	29.3	15 35	33.1	7 32	26.1	12 49	35.2	8 23	29.4	13 00	33.6
31.....	7 35	28.8	15 00	32.9	8 00	28.7	12 39	35.6				

Daily range of declination—Continued.

1° West, plus tabular minutes.

Day.	October, 1904.				November, 1904.				December, 1904.			
	E. extreme.		W. extreme.		E. extreme.		W. extreme.		E. extreme.		W. extreme.	
	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.	Time.	Value.
	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>	<i>h. m.</i>	<i>'</i>
1.....	9 00	30.0	15 00	34.6	9 00	31.8	16 00	35.2	11 00	31.4	16 00	35.1
2.....	8 54	29.1	17 24	34.0	7 41	31.8	17 00	34.8	10 00	32.2	14 00	35.8
3.....	8 00	30.8	17 00	33.9	9 29	32.6	17 00	34.6	10 00	32.4	15 34	35.3
4.....	12 24	31.5	17 00	33.8	19 24	30.9	12 41	35.3	9 00	32.3	15 00	36.0
5.....	8 00	30.3	17 00	33.8	6 00	33.1	16 00	35.1	10 00	32.5	15 00	35.2
6.....	24 00	31.1	18 00	33.4	9 30	31.4	17 30	34.7	9 23	31.6	12 22	35.2
7.....	7 31	30.4	4 00	34.2	9 37	31.3	2 24	34.9	9 29	30.7	15 00	36.0
8.....	8 00	30.2	13 34	35.0	9 00	30.7	13 57	35.0	10 00	32.3	12 34	35.2
9.....	8 34	30.1	13 28	35.3	7 44	31.4	14 00	35.7	8 53	31.4	15 00	37.6
10.....	8 32	28.9	14 00	34.3	9 07	31.5	15 00	35.8	8 52	31.5	13 39	36.6
11.....	9 11	27.9	14 33	35.4	9 18	30.9	16 25	35.4	9 00	32.1	14 00	37.4
12.....	9 00	27.1	15 00	36.4	9 00	30.8	15 00	35.7	10 00	31.3	14 34	36.7
13.....	10 00	29.6	15 46	35.6	9 47	31.9	16 49	34.8	9 03	32.2	15 00	36.3
14.....	9 36	29.5	15 30	35.4	9 31	31.4	16 00	34.7	9 00	32.5	15 00	36.4
15.....	10 00	29.4	17 00	35.2	10 00	31.6	16 39	35.4	10 00	31.8	15 00	36.7
16.....	9 00	30.6	16 00	35.1	9 13	31.6	16 40	35.5	10 00	32.5	14 23	37.3
17.....	9 30	31.6	15 00	36.2	10 00	30.7	3 28	37.0	10 31	30.5	15 00	35.7
18.....	9 41	29.9	16 00	35.0	10 00	32.2	4 00	36.1	10 13	31.3	13 56	37.7
19.....	9 00	30.2	16 00	34.5	9 00	32.9	13 37	36.6	10 00	32.4	13 26	36.3
20.....	7 34	30.8	15 26	35.0	9 00	31.6	14 04	35.3	9 00	31.3	14 00	36.8
21.....	9 23	28.3	12 03	35.2	9 00	31.0	13 00	35.9	8 29	33.1	16 00	36.7
22.....	8 00	31.9	12 37	34.4	8 00	31.8	13 34	36.0	9 45	32.0	15 33	36.4
23.....	8 00	30.6	12 40	34.5	9 29	31.5	1 00	34.7	9 00	33.3	15 00	37.1
24.....	8 00	31.2	13 00	35.6	9 00	31.7	14 00	35.3	10 00	31.6	15 00	36.3
25.....	8 50	31.1	16 09	35.5	9 23	32.9	14 27	36.9	9 40	31.5	15 25	36.3
26.....	8 29	30.1	15 30	35.1	10 00	31.2	14 33	35.5	9 31	33.8	15 00	37.0
27.....	8 00	31.1	13 37	35.8	9 16	31.5	14 52	35.8	10 00	31.7	15 24	36.9
28.....	8 00	32.5	15 00	35.2	10 00	31.0	13 35	36.4	9 28	32.6	13 21	37.5
29.....	8 23	31.7	16 00	35.5	10 50	30.2	15 39	35.4	10 00	30.5	14 50	36.8
30.....	5 15	32.8	15 00	34.9	9 38	31.4	14 25	36.9	9 22	32.5	15 00	38.1
31.....	12 00	32.3	17 00	34.2					9 37	32.7	15 12	36.9

SUMMARY OF MONTHLY AND ANNUAL MEANS.

The following table gives a summary of the monthly and annual mean values of *D*, *H*, *X*, and *Y*. The values of *D* and *H* were derived from the selected days of least disturbance, as indicated in the monthly tabulations. The values of *X* and *Y* were computed from the corresponding values of *D* and *H*.

The dip results are so unreliable that it was not considered worth while to compute the monthly values of *Z* and *F*. The average values for the six months April to September, 1903, and for the whole of 1904, are as follows:

Year.	<i>I</i>	<i>Z</i>	<i>F</i>
	<i>°</i> <i>'</i>	<i>γ</i>	<i>γ</i>
1903 (April to September).....	49 10.0	33980	44910
1904.....	49 15.0	33999	44879

Summary of monthly and annual means.

Month.	1903.				1904.			
	D	H	X	Y	D	H	X	Y
	°	'	γ	γ	°	'	γ	γ
January.....	-1	27.9	29297	29287	-1	27.9	29297	29287
February.....		28.4	303	293		28.4	303	293
March.....		29.2	310	300		29.2	310	300
April.....	-1	22.3	29378	29370	-1	22.3	29378	29370
May.....		22.1	376	368		22.1	376	368
June.....		22.6	377	368		22.6	377	368
July.....		23.3	366	357		23.3	366	357
August.....		23.9	354	345		23.9	354	345
September.....		25.0	339	331		25.0	339	331
October.....		26.0	325	316		26.0	325	316
November.....		26.6	289	279		26.6	289	279
December.....		27.4	308	299		27.4	308	299
Year *.....	-1	23.2	29365	29356	-1	23.2	29365	29356

* For 1903 the means for the six months, April to September, have been used, as they apply more nearly to the middle of the year.

HOURLY VALUES OF D AND H.

The following tables contain the hourly values of declination and horizontal intensity and the corresponding daily means, and the hourly means for each month derived both from the whole month and from 10 selected days comparatively free from disturbance. The hours are local mean time counted from midnight to midnight. The selected days are indicated by asterisks in the first column.

Days which are incomplete have not been included in the means. Missing hourly values on comparatively quiet days have been supplied by interpolation, these interpolated values being enclosed in parentheses.

PORTO RICO MAGNETIC OBSERVATORY.

APRIL, 1903.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1*	23.2	23.2	23.1	22.9	22.5	21.9	20.6	20.0	19.8	20.0	20.1	21.1
2	23.1	22.9	22.8	22.7	22.7	22.4	22.1	21.1	(21.1)	(20.6)	(20.9)	21.5
3*	23.2	23.2	23.0	22.9	22.8	22.3	21.5	20.5	20.4	19.9	20.0	21.1
4	22.9	22.9	22.8	22.8	22.7	22.2	21.0	21.5	21.4	21.0	21.0	21.7
5	22.5	22.6	22.5	22.0	22.1	21.9	20.9	21.6	21.9	(21.2)	(21.4)	22.5
6	21.5	21.8	22.0	22.0	23.0	25.4	27.8	27.4	24.8	22.6	20.6	20.4
7	23.1	22.9	22.9	22.7	22.5	22.3	23.1	23.8	24.3	24.3	23.8	23.6
8	23.1	23.0	22.6	22.6	22.4	22.0	21.4	21.3	21.6	21.3	22.3	23.2
9	22.8	24.5	22.8	22.3	23.0	22.2	20.7	20.1	20.0	19.2	18.7	19.9
10	23.4	23.3	22.9	23.0	22.0	22.3	20.5	19.2	19.0	19.7	21.1	23.0
11	23.5	23.3	23.4	23.4	22.9	22.3	20.9	21.3	19.8	19.6	21.1	23.5
12*	22.7	22.8	22.6	22.5	22.5	22.1	20.9	20.1	19.7	19.4	20.3	22.5
13	22.9	23.0	23.2	22.9	22.5	22.4	20.8	20.3	20.3	20.3	21.4	23.1
14	22.8	22.6	22.8	22.5	22.3	21.9	20.1	19.2	21.0	22.2	23.1	24.3
15	22.9	22.9	22.7	22.5	21.9	22.5	21.5	20.6	20.1	19.4	19.8	21.5
16*	22.7	22.7	22.7	22.7	22.6	22.4	21.7	21.2	21.4	21.2	21.5	22.7
17	22.6	22.6	22.4	22.3	22.2	22.0	21.5	22.2	22.4	22.6	22.2	23.6
18	22.2	22.2	22.2	22.1	22.1	22.3	22.2	22.5	22.1	20.5	20.7	22.1
19*	22.6	22.1	22.1	22.1	22.0	22.0	22.0	21.8	20.9	19.7	20.0	21.9
20*	22.6	22.6	22.5	22.5	22.0	21.8	21.1	20.8	20.9	20.9	21.4	22.9
21*	22.2	22.2	22.0	22.2	21.9	21.4	19.8	19.6	19.5	19.6	20.5	22.0
22	22.3	22.3	22.2	21.9	21.8	21.6	20.5	20.5	21.0	21.3	21.8	22.8
23	22.2	22.2	22.1	22.1	21.8	21.2	19.8	20.2	21.1	22.1	22.7	24.2
24*	22.1	22.3	21.9	21.7	21.6	21.5	21.0	20.5	20.5	19.7	19.8	20.7
25	22.1	22.1	21.9	21.8	21.8	21.4	20.7	20.6	21.3	21.6	22.5	23.0
26	22.4	22.1	21.9	21.8	21.5	21.5	20.6	20.4	19.5	18.5	18.3	19.8
27	21.5	21.4	21.5	21.4	21.4	20.8	20.8	21.8	21.9	21.5	21.5	21.8
28*	22.2	21.9	21.7	21.4	21.3	20.8	19.9	19.9	19.0	19.1	20.7	22.4
29	22.1	21.9	21.8	21.6	21.3	20.6	20.1	20.6	20.4	20.5	21.2	22.1
30*	22.0	21.8	21.8	21.7	21.2	20.9	19.9	19.8	19.1	19.3	20.5	22.2
Mean	22.6	22.6	22.4	22.3	22.2	21.9	21.2	21.0	20.9	20.6	21.0	22.2
Mean*	22.6	22.5	22.3	22.3	22.0	21.7	20.8	20.4	20.1	19.9	20.5	22.0

MAY, 1903.

1*	21.9	21.7	21.6	21.5	21.4	21.1	19.8	19.2	18.4	18.5	19.5	21.5
2	21.6	21.4	21.4	21.2	21.0	20.2	18.9	18.9	19.1	20.0	21.0	22.2
3*	22.0	22.0	22.0	21.8	21.8	21.2	20.1	19.6	18.9	18.5	18.4	19.6
4	21.9	21.9	21.7	21.5	21.1	20.8	20.7	20.7	20.6	21.2	21.1	21.1
5	20.8	21.3	20.9	21.2	20.7	19.9	18.5	19.0	19.4	19.6	20.2	21.4
6	22.3	20.8	21.8	21.2	21.2	21.7	22.5	20.0	19.8	18.9	20.1	21.2
7	22.3	22.2	22.2	21.9	21.2	20.5	19.2	19.2	20.6	21.9	22.4	23.3
8	22.2	22.1	21.8	21.5	21.5	20.6	19.5	19.8	20.5	22.3	23.7	24.9
9	22.2	22.0	21.7	21.5	21.1	20.0	18.1	17.9	18.7	20.8	22.8	24.5
10*	22.4	22.2	22.1	21.8	21.5	20.6	19.2	18.6	19.6	21.0	23.3	25.3
11	22.5	22.3	22.2	22.2	22.1	21.3	19.7	18.5	18.7	19.8	21.5	22.7
12*	22.2	22.0	22.2	22.1	21.9	21.6	20.6	19.0	19.2	19.7	21.2	23.7
13	22.4	22.4	22.2	22.1	21.8	21.2	20.1	19.4	19.4	19.7	20.9	23.0
14*	22.4	22.1	21.8	21.9	21.8	21.7	21.3	20.3	20.6	21.2	21.7	22.6
15*	22.6	22.0	22.0	21.8	21.5	21.2	20.5	20.0	20.0	20.6	21.7	22.7
16	22.2	22.0	21.9	21.9	21.8	21.7	21.2	20.6	20.1	20.0	20.4	21.2
17*	21.7	22.1	22.1	(21.9)	(21.7)	(21.2)	(20.1)	19.8	19.9	20.9	22.2	22.9
18*	22.1	22.2	22.1	21.9	21.8	21.5	20.3	18.8	19.1	20.5	21.8	22.7
19*	22.1	22.1	22.1	22.1	21.8	21.7	20.0	19.0	19.8	21.1	22.8	24.5
20	22.1	22.1	22.0	21.8	21.7	21.0	19.4	18.2	19.1	19.9	22.0	24.2
21	22.2	22.2	22.2	22.1	22.0	21.0	19.2	17.9	18.3	19.1	21.4	23.4
22	21.9	21.9	21.5	21.5	21.5	20.4	19.1	18.5	19.5	20.7	21.5	22.1
23	22.7	21.2	20.7	20.9	20.8	19.6	18.5	18.8	21.4	24.0	25.1	24.8
24	22.5	22.3	22.0	21.8	21.7	20.5	19.5	18.9	20.8	22.9	23.8	24.8
25*	22.4	22.0	21.9	21.4	20.8	20.0	18.3	18.4	19.9	22.0	23.2	23.3
26	22.4	22.3	22.0	21.8	21.6	20.6	18.9	18.8	20.1	20.8	21.4	22.3
27	22.5	22.5	22.4	22.2	21.8	21.1	19.7	18.7	20.0	21.6	22.5	24.0
28	21.3	21.6	21.3	21.5	21.3	20.3	19.3	18.8	18.9	19.5	20.9	22.9
29	22.6	22.4	22.3	22.1	21.7	21.0	19.9	19.9	19.9	20.4	21.6	23.6
30	22.0	21.7	21.7	21.7	21.6	20.8	20.2	19.7	19.6	20.6	22.1	22.9
31	22.5	22.3	22.2	22.1	21.7	21.4	20.8	20.4	20.5	22.1	23.3	24.3
Mean	22.2	22.0	21.9	21.7	21.5	20.9	19.8	19.2	19.7	20.6	21.8	23.0
Mean*	22.2	22.0	22.0	21.8	21.6	21.2	20.0	19.3	19.5	20.4	21.6	22.9

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

1° WEST, PLUS TABULAR MINUTES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
/	/	/	/	/	/	/	/	/	/	/	/	/
22.8	24.2	24.7	24.7	24.3	23.8	23.2	23.4	23.1	23.0	23.2	23.4	22.6
23.4	25.3	25.9	24.8	24.0	23.7	23.5	23.1	22.7	22.8	22.9	23.1	22.9
22.3	24.2	25.4	25.4	24.5	23.8	23.5	23.4	23.3	23.3	22.8	23.0	22.7
23.1	23.9	24.1	24.4	24.0	23.7	23.7	23.7	23.5	23.4	23.2	22.7	22.8
23.4	24.5	24.9	24.9	24.3	23.8	23.7	23.9	23.4	22.6	22.4	20.2	22.7
21.4	22.6	23.4	24.4	24.6	24.0	23.4	23.7	23.4	23.4	23.3	23.3	23.3
23.8	24.3	24.2	24.1	23.9	23.9	23.2	23.3	23.6	23.6	23.5	23.3	23.5
25.0	26.1	25.9	25.2	24.4	24.4	24.1	23.6	23.6	22.3	23.5	23.2	23.2
21.5	23.1	23.7	23.7	23.4	21.9	22.7	23.5	23.3	23.1	23.5	23.5	22.2
24.7	25.0	24.7	23.9	22.8	23.3	23.2	23.2	23.2	23.3	23.3	23.3	22.7
25.3	25.5	25.0	24.3	23.7	22.9	22.8	22.9	22.6	22.0	22.5	22.8	22.8
24.0	24.3	24.3	23.7	22.7	22.4	22.0	22.5	22.5	22.7	22.8	23.0	22.3
24.3	24.5	24.3	23.5	22.5	22.6	22.7	22.7	22.7	22.7	22.9	22.6	22.6
25.6	25.9	25.3	24.3	23.4	22.8	22.9	22.9	22.9	22.8	22.9	22.9	22.9
23.6	24.6	25.2	24.6	24.3	23.9	23.3	22.9	22.7	22.5	22.7	22.8	22.6
23.5	24.2	24.1	23.3	22.4	22.8	22.9	22.6	22.6	22.6	22.6	22.6	22.6
25.0	25.9	25.8	25.2	24.2	23.6	22.8	22.8	22.8	22.8	22.7	22.4	23.1
23.3	23.8	24.3	24.4	24.1	23.4	22.6	22.8	22.8	22.8	22.8	22.7	22.6
23.4	24.3	24.5	24.0	23.6	23.2	22.8	22.8	23.0	23.0	22.8	22.8	22.5
23.9	24.2	24.1	23.1	22.7	22.9	22.9	23.0	22.7	22.7	22.5	22.4	22.5
23.5	24.1	24.2	24.0	23.1	22.6	22.6	22.6	22.6	22.6	22.5	22.5	22.1
24.1	24.3	24.1	23.3	22.2	22.1	22.4	22.7	22.7	22.7	22.5	22.4	22.3
25.4	25.8	25.8	25.1	23.9	22.9	22.7	22.6	22.4	22.3	22.3	22.3	22.7
22.2	23.5	24.0	23.5	23.2	22.9	22.6	22.5	22.5	22.5	22.5	22.3	22.0
23.9	24.9	24.5	23.7	22.7	22.5	22.6	22.7	22.6	22.5	22.5	22.5	22.4
21.4	23.9	25.2	25.2	23.4	22.6	22.5	22.0	22.0	21.8	22.0	21.4	21.7
22.9	24.1	24.5	23.9	23.2	22.9	22.5	22.3	22.3	22.3	22.1	22.1	22.2
23.6	25.0	25.3	24.1	23.2	22.8	22.4	22.2	22.0	22.2	22.3	22.2	22.0
23.0	23.9	23.9	23.4	22.8	22.7	22.7	22.4	22.3	22.2	22.1	22.1	22.0
23.6	24.4	25.0	24.5	23.5	22.9	22.4	22.2	22.0	21.7	21.8	22.0	21.9
23.6	24.5	24.7	24.2	23.5	23.1	22.9	22.9	22.8	22.7	22.7	22.6	22.5
23.3	24.2	24.6	24.0	23.3	23.0	22.7	22.7	22.6	22.6	22.6	22.6	22.3

1° WEST, PLUS TABULAR MINUTES.

23.5	25.3	25.5	24.5	23.2	22.3	22.0	21.9	21.9	21.9	21.9	21.8
23.1	24.0	24.4	23.7	23.0	22.4	22.4	22.2	22.1	22.2	22.1	21.7
21.0	22.4	23.8	24.2	23.9	23.2	22.8	22.7	22.5	22.4	22.2	21.6
21.8	22.4	22.9	22.9	22.4	22.4	22.1	22.3	21.7	21.1	20.6	20.8
22.7	23.3	23.1	22.3	22.4	22.3	22.6	22.5	22.5	22.5	22.4	22.3
22.8	23.4	23.1	22.8	22.4	22.4	21.0	22.2	21.9	21.7	22.3	22.5
24.3	24.7	24.5	23.6	22.9	23.0	22.8	22.5	22.4	22.4	22.4	22.3
25.2	24.9	24.5	23.5	22.9	22.4	22.1	22.3	22.2	22.3	21.9	22.2
24.6	24.2	24.4	23.6	22.9	22.7	22.6	22.6	22.4	22.6	22.3	22.3
26.0	25.7	25.1	24.1	23.4	23.0	22.9	22.9	22.7	22.7	22.8	22.7
23.5	24.6	24.9	24.0	23.1	22.6	22.7	22.6	22.5	22.5	22.3	22.3
24.6	24.4	23.9	23.3	23.0	22.4	22.5	22.5	22.5	22.5	22.5	22.4
25.0	26.3	26.2	25.0	23.3	22.5	22.6	22.6	22.5	22.5	22.5	22.4
22.9	23.7	23.9	23.1	22.4	22.5	22.3	22.0	22.0	21.9	22.0	22.3
23.9	24.1	24.2	23.6	22.6	22.9	22.9	22.9	22.6	22.6	22.4	22.1
22.3	23.1	23.5	23.5	23.1	22.9	23.4	22.9	22.6	22.2	21.7	21.8
23.4	24.2	24.6	24.5	23.6	22.8	22.7	22.5	22.5	22.4	22.3	22.2
23.1	23.7	24.0	23.9	23.5	22.9	22.8	22.8	22.7	22.4	22.3	22.3
25.3	25.3	24.5	23.6	23.0	22.8	22.6	22.7	22.6	22.4	22.2	22.1
25.1	25.1	24.0	23.2	22.8	22.7	22.7	22.8	22.8	22.6	22.3	22.3
24.4	25.2	25.5	24.7	24.0	22.9	22.7	22.7	22.7	22.7	22.5	22.2
22.7	23.2	23.0	22.5	22.2	22.5	22.5	22.7	22.7	22.7	22.7	22.6
23.9	23.9	24.5	24.2	23.6	22.8	23.3	23.1	22.6	22.3	22.5	22.5
25.1	25.0	25.1	25.0	23.8	23.3	22.5	22.4	22.5	22.4	22.5	22.5
23.8	23.9	23.2	22.5	22.1	22.3	22.8	22.9	22.9	22.8	22.8	22.8
22.9	23.4	23.1	22.9	22.4	22.4	22.1	22.4	22.8	22.1	22.5	22.1
24.6	24.5	24.1	23.4	22.8	22.8	22.7	22.3	22.4	22.4	22.7	22.4
24.1	24.8	24.5	23.7	23.0	22.8	22.8	22.6	22.6	22.4	22.0	21.8
25.1	25.7	25.2	24.1	22.8	22.7	22.8	22.6	22.4	22.2	22.2	22.6
23.9	24.6	24.6	23.9	23.4	23.6	23.3	22.7	22.4	22.2	22.2	22.6
25.0	24.7	24.3	23.3	22.5	22.7	22.8	22.8	22.8	22.7	22.7	22.7
23.9	24.3	24.3	23.6	23.0	22.7	22.6	22.6	22.5	22.3	22.3	22.3
23.8	24.3	24.3	23.7	23.1	22.7	22.6	22.5	22.4	22.4	22.3	22.3

Interpolated values are in parentheses.

JUNE, 1903.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	22.5	22.5	22.1	22.2	22.0	21.4	20.2	18.6	19.0	21.2	22.0	21.2
2.....	23.0	22.6	21.5	21.3	21.3	20.3	20.2	20.7	21.8	21.9	22.0	22.1
3.....	22.1	22.7	22.1	21.8	21.3	20.6	20.1	20.7	21.7	23.2	23.7	23.1
4.....	23.2	22.0	22.0	21.9	21.5	20.2	19.3	20.3	22.0	23.2	23.9	23.6
5.....	22.4	22.5	22.4	22.0	21.8	20.7	20.6	21.7	23.5	24.2	23.6	23.0
6.....	22.5	22.4	22.2	21.9	21.8	20.2	19.6	21.6	23.7	24.7	24.9	24.8
7*.....	22.8	22.4	22.2	21.9	21.9	19.9	18.8	19.6	22.0	24.0	24.7	24.7
8*.....	22.7	22.5	22.3	22.1	21.6	19.9	18.7	19.2	21.0	22.2	23.0	22.9
9*.....	22.4	22.3	22.4	21.9	21.6	20.6	18.2	18.9	21.0	23.4	24.3	24.6
10.....	22.6	22.6	22.3	22.0	21.7	20.4	18.8	19.2	20.9	22.2	23.4	24.5
11*.....	22.8	22.7	22.3	22.0	21.7	21.1	20.2	20.2	21.4	22.3	23.4	24.1
12*.....	22.9	22.8	22.7	22.3	22.1	20.6	18.7	18.1	20.5	22.2	24.1	25.0
13*.....	22.8	22.8	22.7	22.5	22.2	21.3	19.1	17.9	18.6	19.6	20.2	20.9
14.....	23.1	22.8	22.7	22.7	22.7	21.6	20.4	19.5	19.5	21.1	22.8	24.0
15*.....	23.2	23.2	22.8	22.8	22.5	22.0	20.7	20.2	21.2	21.6	22.0	23.3
16.....	23.2	23.2	23.0	22.7	22.5	22.2	20.7	20.1	21.5	22.2	23.0	25.0
17.....	22.2	22.1	22.2	22.2	21.6	20.8	19.8	19.8	20.3	21.3	21.8	22.1
18.....	22.3	22.7	22.0	21.9	21.5	20.5	18.7	18.1	19.1	20.7	22.1	23.9
19.....	23.5	22.6	22.6	23.1	22.0	21.2	19.6	19.5	19.6	21.1	22.6	23.9
20.....	23.4	23.0	22.8	23.0	22.6	22.2	21.2	20.2	21.4	23.4	24.6	25.4
21.....	23.0	23.0	23.0	22.5	22.2	21.2	20.6	21.6	23.1	23.6	23.8	23.1
22.....	22.6	22.6	22.6	22.4	22.0	21.2	20.5	19.8	21.2	22.6	23.2	24.2
23.....	22.7	22.7	22.4	21.9	21.8	19.7	18.3	19.5	21.6	22.8	24.1	24.8
24.....	23.3	23.1	23.0	22.5	22.8	20.1	18.2	22.4	20.9	22.7	23.5	24.5
25*.....	23.0	22.9	22.9	22.9	22.2	20.5	18.6	20.4	22.4	23.6	24.5	24.6
26.....	23.3	23.2	23.0	22.6	22.1	20.0	16.9	16.2	19.1	23.6	26.0	26.9
27*.....	23.2	23.0	22.8	22.7	22.3	21.0	19.0	18.4	19.7	21.1	22.7	23.8
28*.....	23.2	22.8	22.7	22.6	22.7	21.0	18.7	17.7	18.0	20.3	22.9	24.7
29.....	23.4	23.1	22.7	22.3	22.7	21.9	20.8	20.5	20.5	21.4	21.7	22.6
30.....	22.6	22.7	22.8	22.7	22.6	21.4	20.8	20.0	20.3	20.2	21.6	22.8
Mean.....	22.9	22.7	22.5	22.3	22.0	20.9	19.5	19.7	20.9	22.3	23.2	23.8
Mean*.....	22.9	22.7	22.6	22.4	22.1	20.8	19.1	19.1	20.6	22.0	23.2	23.9

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1*.....	22.8	23.2	23.8	23.2	22.6	21.8	20.8	20.6	21.4	22.8	23.7	24.3
2*.....	23.4	23.2	23.0	23.1	23.0	21.5	20.0	20.1	20.7	22.1	22.7	23.2
3.....	23.0	23.2	23.1	23.1	23.0	23.0	21.9	21.2	21.2	21.5	22.7	23.8
4*.....	23.2	23.2	23.1	22.7	22.7	21.7	20.6	20.2	21.4	22.3	23.7	24.5
5.....	23.2	23.2	23.2	22.9	22.6	21.8	20.0	19.3	20.2	22.7	24.4	25.3
6.....	22.5	22.6	22.3	22.5	22.0	20.3	18.7	18.9	21.1	23.3	25.9	26.7
7.....	23.6	23.5	23.5	22.9	22.6	21.2	19.6	19.6	21.2	22.7	24.9	26.1
8.....	23.5	23.2	23.0	22.8	22.4	21.3	19.6	18.9	20.0	22.8	25.3	25.9
9.....	23.2	23.4	23.4	23.1	23.0	21.9	20.0	20.0	20.8	22.6	24.2	25.0
10.....	23.6	23.6	23.6	23.1	22.5	22.3	19.8	18.9	20.8	22.9	23.7	25.5
11.....	23.1	23.6	23.6	24.2	23.5	22.2	20.4	19.2	20.6	22.3	24.0	25.4
12*.....	23.6	23.9	23.7	23.7	23.6	22.7	21.7	20.6	21.2	21.9	22.4	23.7
13.....	23.7	23.6	23.9	24.2	23.6	22.7	20.7	19.9	19.4	20.4	22.2	24.1
14.....	24.2	24.6	24.7	24.6	24.1	23.3	21.5	20.3	20.3	21.3	23.0	24.8
15*.....	23.3	23.5	23.6	23.3	22.9	22.1	20.5	19.8	20.9	22.2	23.4	24.8
16.....	23.6	23.5	23.5	23.4	23.2	22.3	20.9	19.8	20.5	22.6	23.3	25.7
17*.....	23.4	23.3	23.2	23.0	22.9	22.2	20.4	20.0	21.4	23.2	24.6	25.2
18*.....	23.3	23.3	23.0	22.9	22.7	21.8	20.6	20.0	22.1	23.4	24.0	24.0
19.....	23.3	22.9	23.9	24.2	24.0	23.0	21.4	21.1	21.6	22.6	23.8	24.0
20.....	23.5	23.4	23.4	23.2	22.8	21.7	19.8	19.3	21.0	22.5	23.5	22.9
21.....	24.4	23.7	23.5	23.4	23.3	22.6	21.1	21.5	22.3	22.5	23.4	23.9
22*.....	23.5	23.5	23.4	23.2	23.1	22.0	20.8	21.3	23.4	24.7	24.7	25.2
23.....	23.4	23.3	23.3	23.2	22.8	21.4	20.3	20.4	21.6	22.2	23.3	24.1
24*.....	23.8	23.6	23.4	23.2	22.8	21.8	19.7	19.7	21.3	23.1	24.4	25.4
25.....	23.8	23.6	23.2	22.6	22.5	21.0	19.0	19.8	21.5	22.7	24.2	25.7
26.....	23.7	24.3	24.3	23.0	23.2	23.7	21.9	19.6	21.4	22.7	23.9	24.4
27.....	23.9	23.9	23.9	23.2	22.8	22.7	21.3	18.8	20.3	23.1	25.6	26.0
28.....	23.3	23.5	25.1	24.5	23.8	22.4	21.1	20.0	20.2	20.5	21.1	22.9
29.....	24.1	23.9	23.8	23.9	23.3	22.1	20.9	22.3	23.2	24.3	24.9	25.0
30*.....	23.8	23.8	23.8	23.6	23.2	22.4	21.1	20.8	21.8	22.6	23.0	24.1
31.....	23.8	24.1	24.5	23.7	23.7	22.3	21.8	22.7	23.1	23.8	24.5	24.1
Mean.....	23.5	23.5	23.6	23.3	23.0	22.1	20.6	20.1	21.2	22.6	23.8	24.7
Mean*.....	23.4	23.4	23.4	23.2	23.0	22.0	20.6	20.3	21.6	22.8	23.7	24.4

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

HOURLY VALUES OF DECLINATION.

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1° WEST, PLUS TABULAR MINUTES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
22.1	22.6	22.8	22.5	22.7	23.0	22.8	23.1	21.5	21.5	21.5	21.8	21.8
23.1	24.0	22.8	23.3	23.3	23.0	23.1	21.8	22.1	22.6	22.7	22.5	22.2
22.6	22.4	22.4	23.0	23.6	23.6	23.2	22.5	22.9	22.9	22.4	22.5	22.4
23.2	22.6	22.5	22.9	22.6	23.1	23.1	22.6	22.9	22.9	22.9	22.7	22.4
23.1	22.8	22.4	22.0	22.3	22.9	23.2	23.1	23.1	23.1	23.0	22.8	22.6
24.4	23.5	22.5	22.0	22.3	22.8	22.8	22.9	23.1	22.6	22.6	22.9	22.7
24.8	24.7	24.1	23.1	22.8	23.0	23.2	23.2	23.2	23.1	22.9	22.8	22.7
23.0	23.1	23.4	22.8	22.7	22.8	23.4	23.1	23.3	23.0	22.7	22.5	22.2
24.8	24.7	24.5	24.0	23.6	23.3	23.0	23.1	23.3	23.0	23.0	22.9	22.7
25.0	25.2	25.0	24.0	23.3	22.9	23.2	23.0	22.7	22.9	22.8	22.8	22.6
24.8	25.0	24.6	23.5	22.4	22.4	22.9	23.0	23.0	22.9	22.9	22.9	22.7
24.7	24.6	24.6	23.9	22.9	22.7	23.0	23.2	23.2	23.0	23.0	23.0	22.7
22.0	22.8	23.8	23.9	23.8	23.5	23.2	23.5	23.3	23.3	23.2	23.2	22.1
25.0	25.0	24.5	23.9	23.2	23.2	23.3	23.4	23.3	23.3	23.3	23.2	22.8
24.2	25.5	25.1	24.3	23.8	23.3	23.2	23.4	23.4	23.4	23.4	23.3	23.0
26.2	25.5	25.6	25.5	24.8	24.8	23.6	23.8	23.2	22.7	22.8	22.6	23.4
23.6	24.6	24.6	24.4	24.0	24.0	24.3	23.9	22.5	22.1	22.1	22.6	22.4
24.5	23.7	23.1	23.1	22.9	23.0	23.6	23.7	23.6	23.3	23.1	23.7	22.3
23.8	23.8	24.2	23.8	23.6	23.6	23.6	23.7	23.9	23.9	23.6	23.6	22.8
25.0	24.4	24.3	23.8	23.0	22.8	23.4	23.4	22.8	22.5	22.5	22.8	23.1
23.6	23.5	23.0	22.5	23.0	23.0	23.5	23.6	23.4	23.2	23.0	22.5	22.9
23.7	23.4	23.2	23.1	22.2	22.8	22.9	23.4	23.1	23.0	22.9	22.8	22.6
24.6	24.2	24.2	23.9	23.9	23.4	23.4	23.1	23.1	23.1	22.4	22.5	22.7
24.7	24.5	23.5	22.2	22.1	21.9	22.3	22.9	23.3	22.9	23.3	23.5	22.7
24.2	23.6	24.0	23.6	23.2	22.7	22.9	23.2	23.3	23.3	23.3	23.2	22.9
26.4	25.2	24.2	23.3	23.2	23.0	23.2	23.3	23.3	23.2	23.2	23.2	22.8
24.1	24.2	23.8	22.7	22.3	22.6	23.0	23.2	23.2	23.0	23.2	23.3	22.4
25.6	25.1	25.2	24.9	23.5	23.7	23.5	23.5	23.4	23.5	23.3	23.3	22.7
22.7	23.4	23.5	23.3	23.1	23.7	23.5	23.5	23.3	19.7	22.9	21.7	22.4
23.7	25.6	25.5	25.2	24.6	23.2	23.8	23.8	23.7	23.0	22.8	22.8	22.8
24.1	24.1	23.9	23.5	23.2	23.1	23.2	23.2	23.1	22.9	22.9	22.9	22.6
24.2	24.3	24.3	23.7	23.1	23.0	23.1	23.2	23.3	23.2	23.1	23.0	22.6

1° WEST, PLUS TABULAR MINUTES.

24.2	24.2	23.4	23.3	23.2	23.4	23.4	23.3	23.1	23.0	23.1	23.1	23.0
23.2	24.4	24.4	24.3	23.8	23.7	23.4	23.6	23.3	23.1	23.3	23.1	22.9
24.5	24.5	24.3	23.9	23.3	23.1	23.2	23.3	23.2	23.3	23.4	23.2	23.1
25.3	25.3	25.1	24.5	24.2	23.8	23.6	23.7	23.6	23.6	23.5	23.3	23.3
24.5	24.8	24.9	24.8	24.1	24.2	22.7	23.6	23.5	23.7	23.5	22.4	23.1
26.6	26.0	25.1	23.5	22.7	23.0	23.7	23.6	23.6	23.5	23.5	23.5	23.1
27.3	26.6	25.6	24.3	23.2	23.1	23.5	23.3	23.6	23.2	23.2	23.6	23.4
26.4	25.6	24.7	24.1	23.4	23.5	23.8	24.0	23.8	23.6	23.4	23.4	23.3
25.0	24.1	23.2	22.8	22.6	23.2	23.2	22.5	23.4	23.7	23.7	23.7	23.0
26.4	26.1	25.0	23.8	23.4	23.2	23.8	23.7	23.5	23.2	22.9	22.2	23.2
25.6	26.1	25.6	25.0	24.4	23.8	24.0	23.6	22.6	22.8	22.8	23.4	23.4
24.7	24.8	24.3	24.0	23.6	23.6	23.6	23.6	23.6	23.5	23.5	23.7	23.3
25.2	26.1	25.8	25.3	24.6	23.6	23.9	23.9	24.2	24.3	24.2	24.1	23.5
25.9	25.8	25.8	26.0	25.7	24.7	24.2	24.0	23.6	23.6	23.6	23.6	23.9
24.9	24.6	24.1	23.9	23.1	23.4	23.7	23.9	23.9	23.6	23.7	23.9	23.2
27.2	27.8	27.6	26.0	24.6	24.0	23.6	22.7	23.6	23.6	23.5	22.9	23.7
25.0	24.7	25.0	25.3	24.8	24.7	24.1	23.8	23.8	23.8	23.6	23.3	23.5
24.5	25.3	25.2	25.2	24.7	24.1	23.6	23.6	23.6	23.3	23.3	23.5	23.4
24.0	24.4	25.2	25.6	24.8	24.5	24.1	23.8	23.4	23.8	23.6	23.5	23.6
22.8	22.9	23.1	23.1	23.2	23.9	24.1	24.4	24.1	24.1	24.0	24.0	22.9
24.4	24.4	24.0	24.0	23.8	23.9	23.7	23.9	23.7	23.8	23.7	23.7	23.4
25.5	25.8	25.3	24.3	24.0	24.3	24.1	23.9	24.0	23.8	23.7	23.7	23.8
24.3	23.9	24.1	23.3	23.3	23.3	23.7	23.7	23.9	23.8	23.9	23.9	23.1
25.6	25.4	24.8	24.5	23.9	23.9	23.8	23.9	23.9	23.9	23.9	23.9	23.5
26.8	26.0	25.8	25.0	24.0	23.7	24.3	23.9	23.8	23.1	23.3	23.9	23.5
24.9	26.0	26.3	25.5	24.6	23.9	23.7	23.3	22.4	23.4	23.3	23.4	23.6
26.0	25.6	25.0	25.4	24.8	24.4	23.9	23.7	23.1	23.1	22.7	22.4	23.6
24.2	25.5	25.5	24.8	24.3	23.8	23.5	24.1	23.9	23.8	23.6	23.7	23.3
25.0	25.5	25.0	24.7	23.9	23.6	23.2	23.6	24.1	24.1	23.8	23.7	23.8
25.0	24.4	24.1	23.8	23.8	23.7	24.1	24.1	24.2	24.1	24.1	23.8	23.5
23.8	24.1	23.3	23.1	23.3	23.9	24.3	23.7	23.8	24.1	23.7	23.6	23.6
25.1	25.2	24.9	24.4	23.9	23.8	23.7	23.7	23.6	23.6	23.5	23.5	23.4
24.8	24.9	24.6	24.3	23.9	23.9	23.7	23.7	23.7	23.6	23.6	23.5	23.3

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Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	(23.7)	(23.7)	(23.7)	(23.6)	(23.5)	(22.4)	(21.0)	20.7	22.6	24.9	26.5	26.2
2*.....	24.0	23.7	23.7	23.8	23.4	21.9	20.5	20.6	22.3	23.8	24.8	25.0
3.....	23.8	23.5	23.4	23.4	23.0	21.7	20.5	22.9	25.5	27.2	27.0	26.4
4.....	24.0	24.1	23.6	23.5	23.1	21.2	19.2	19.3	21.6	23.6	24.6	24.8
5.....	23.1	23.5	23.6	23.5	23.0	21.6	19.9	20.6	22.2	23.9	23.9	23.9
6*.....	24.0	23.7	23.5	23.1	22.8	21.8	19.8	19.9	20.9	21.5	22.4	23.9
7*.....	23.9	23.6	23.6	23.3	22.8	21.5	20.3	20.6	23.3	23.3	24.0	24.8
8.....	24.0	23.6	23.4	23.1	22.8	21.8	20.1	19.7	21.9	23.6	25.4	26.6
9*.....	24.0	23.9	23.6	23.3	22.8	21.2	19.3	18.5	20.1	22.7	25.1	26.5
10.....	24.0	23.9	23.6	23.3	22.9	22.2	21.5	21.8	21.7	22.7	23.5	24.3
11.....	24.0	23.6	23.3	22.8	21.7	21.0	19.4	19.7	20.0	24.0	24.8	25.1
12.....	24.2	24.6	24.2	23.6	23.0	22.2	20.1	20.7	22.8	23.4	23.6	24.9
13.....	23.9	23.9	23.8	23.8	23.2	22.7	21.7	19.6	20.9	22.3	22.8	23.4
14.....	24.0	24.0	23.9	25.0	23.8	22.4	20.8	20.2	22.1	23.5	23.8	24.2
15.....	23.5	23.6	23.9	23.9	23.5	22.6	21.5	20.6	21.0	21.8	23.0	24.4
16*.....	23.9	23.9	23.9	23.6	23.4	22.1	20.2	21.0	21.6	23.2	23.4	24.2
17.....	24.0	23.5	23.4	23.5	23.9	22.9	22.6	23.3	23.9	24.2	22.2	24.7
18*.....	23.9	24.0	23.9	23.5	23.3	22.4	20.9	21.5	23.3	24.2	25.0	24.8
19*.....	24.0	24.1	24.0	23.6	23.6	22.6	21.4	22.6	24.4	25.6	25.9	26.2
20.....	24.4	24.4	24.0	24.0	23.8	23.0	23.4	22.3	24.0	24.4	25.0	26.0
21.....	23.9	24.0	23.8	23.1	22.7	21.1	19.0	20.8	21.7	22.9	23.9	23.9
22.....	27.3	22.9	22.9	25.3	25.1	23.1	20.5	21.9	23.5	25.3	25.1	26.1
23.....	24.1	24.1	24.1	23.7	24.7	22.6	20.3	21.1	22.9	24.0	25.1	25.9
24*.....	24.4	25.0	24.4	23.9	23.4	22.0	19.5	20.2	21.4	22.5	23.5	24.4
25.....	24.5	25.0	24.4	23.9	23.5	22.0	20.5	21.0	22.3	23.9	25.1	25.2
26.....	(24.1)	(24.1)	(24.0)	(24.0)	(23.8)	(22.7)	(21.3)	(21.7)	23.5	24.3	25.3	25.5
27.....	24.1	24.6	23.8	23.5	23.5	22.8	20.9	21.1	22.2	23.5	23.5	23.5
28*.....	24.2	24.3	24.2	24.3	24.2	22.6	21.4	22.4	23.0	23.3	23.8	24.5
29*.....	24.5	24.5	24.5	24.2	24.0	23.1	20.7	20.6	21.6	23.0	24.5	25.7
30.....	24.6	24.5	24.5	23.8	23.4	21.9	20.4	20.7	21.8	22.2	23.3	25.0
31.....	24.3	24.2	23.8	23.7	23.6	23.1	21.3	22.0	22.6	23.4	24.2	24.5
Mean.....	24.1	24.0	23.8	23.7	23.4	22.2	20.6	21.0	22.3	23.6	24.3	25.0
Mean*.....	24.1	24.1	23.9	23.7	23.4	22.1	20.4	20.8	22.2	23.3	24.2	25.0

SEPTEMBER, 1903.

1.....	24.4	24.2	23.8	23.4	23.3	22.2	22.1	22.4	22.8	24.5	25.8	26.7
2.....	23.7	23.4	23.2	22.8	22.6	21.6	21.4	21.6	21.8	23.1	24.4	25.4
3.....	24.8	24.8	24.6	24.0	23.8	22.5	20.3	21.0	22.5	23.8	24.9	25.4
4.....	24.9	24.6	24.3	24.2	23.4	22.4	21.2	22.2	24.8	26.1	27.5	28.7
5*.....	24.4	24.4	23.8	23.3	22.7	21.7	19.3	20.9	23.2	23.2	25.1	26.2
6.....	24.8	24.3	26.0	24.1	23.6	22.7	20.1	20.7	22.1	24.1	25.4	26.1
7.....	24.9	24.8	24.3	24.3	23.7	22.4	20.5	19.9	20.7	21.9	23.6	25.5
8.....	24.9	24.4	24.1	23.1	23.0	21.5	19.6	19.9	21.4	22.4	24.1	25.6
9.....	24.3	25.1	24.9	23.7	23.0	21.9	20.6	20.5	21.4	22.9	24.7	26.3
10.....	25.0	25.4	25.0	24.3	24.1	23.3	21.2	20.3	20.9	22.0	23.3	25.1
11*.....	25.0	24.9	24.7	24.4	24.3	23.1	21.1	20.7	22.0	24.3	26.5	27.3
12*.....	24.9	24.9	24.8	24.5	25.0	23.9	22.0	22.3	22.9	24.8	25.5	26.9
13.....	25.1	25.0	24.8	24.7	24.4	23.2	22.1	22.0	23.3	24.4	24.4	25.5
14*.....	25.3	25.5	25.1	24.9	24.8	23.8	22.9	23.5	24.3	25.0	25.6	26.3
15*.....	25.4	25.3	25.1	24.9	24.7	23.8	21.9	21.7	22.3	22.9	24.1	26.1
16*.....	(25.4)	(25.4)	(25.1)	(24.8)	(24.4)	(23.5)	(22.1)	(22.1)	22.7	24.2	25.3	26.1
17.....	25.0	25.1	25.0	24.7	24.4	23.6	23.1	22.9	23.2	24.4	26.0	27.1
18.....	25.3	25.0	24.9	24.7	24.5	23.7	23.2	23.3	24.9	26.7	27.7	27.9
19.....	25.3	24.3	23.9	24.1	23.7	24.1	23.2	21.9	21.7	23.9	25.5	27.4
20.....	24.9	25.0	26.3	24.9	24.8	23.1	22.6	23.5	23.1	24.5	26.8	27.3
21.....	26.2	25.3	24.9	24.8	24.4	23.5	21.9	21.8	23.1	24.7	26.7	27.5
22.....	25.9	25.4	25.4	25.0	24.7	23.2	21.3	21.5	23.0	24.8	27.1	28.0
23.....	24.5	24.8	24.3	25.1	24.3	23.8	22.4	21.4	21.7	24.4	25.9	26.7
24.....	26.0	26.6	26.5	24.8	24.8	25.5	24.5	23.2	23.2	24.1	25.0	25.6
25*.....	25.6	25.3	25.4	25.4	25.3	24.8	23.9	23.9	24.1	24.7	25.7	27.1
26*.....	25.7	25.6	25.7	25.0	24.8	24.4	23.1	22.4	22.9	24.3	25.3	25.7
27*.....	25.5	25.5	25.4	25.5	24.9	24.3	23.2	22.9	23.0	23.9	24.3	25.3
28.....	25.6	25.6	25.5	25.6	25.1	24.8	23.6	23.1	22.9	23.1	24.1	24.9
29.....	24.7	26.0	25.1	26.5	25.3	25.0	24.1	24.3	24.5	25.1	25.4	25.6
30.....	25.4	26.5	25.5	25.6	25.3	24.8	24.3	24.1	24.5	24.7	24.9	25.3
Mean.....	25.1	25.1	24.9	24.6	24.2	23.4	22.1	22.1	22.8	24.1	25.4	26.4
Mean*.....	25.2	25.2	25.0	24.7	24.5	23.7	22.3	22.3	23.1	24.2	25.3	26.4

*The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

1° WEST, PLUS TABULAR MINUTES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
25.9	25.6	25.3	25.2	24.4	24.0	24.2	24.4	24.4	24.1	24.1	24.0	24.0
24.9	24.9	24.9	24.9	24.6	24.4	24.8	24.4	24.4	24.3	24.1	24.0	23.8
25.8	24.9	24.0	23.2	23.5	23.8	24.6	24.3	24.3	24.2	24.0	24.0	24.1
25.2	25.9	25.2	24.6	23.5	23.2	23.2	23.6	23.6	22.5	23.2	23.0	23.3
24.2	24.7	25.4	25.7	25.2	24.8	24.6	24.3	24.3	24.1	24.1	24.0	23.7
24.8	26.0	25.2	24.5	23.6	23.5	24.1	24.3	24.1	24.0	24.0	23.9	23.3
24.8	25.2	24.8	24.7	24.3	24.3	24.3	24.0	23.9	23.9	23.9	24.0	23.6
26.4	26.0	25.2	24.5	23.9	23.9	24.2	24.2	24.3	24.0	24.2	24.0	23.8
26.5	26.4	25.9	25.7	24.8	24.5	24.7	24.8	24.7	24.0	23.9	23.6	23.8
25.7	26.3	26.0	24.9	23.9	23.5	24.3	24.7	24.6	24.5	24.1	24.0	23.8
25.1	25.9	24.7	24.8	25.1	24.5	24.2	24.6	24.3	24.2	24.6	24.3	23.6
26.6	27.6	27.6	26.4	25.4	24.5	24.0	24.2	24.3	24.1	23.9	23.4	24.1
24.4	25.3	25.0	24.7	24.7	25.0	24.6	23.6	23.4	23.9	24.2	24.4	23.6
25.1	25.9	27.2	27.0	25.4	24.4	24.4	24.4	24.2	23.9	23.9	23.4	24.0
25.2	25.6	25.7	25.2	25.0	24.6	24.4	24.5	24.2	24.2	24.0	23.9	23.7
25.4	26.2	26.8	26.0	25.1	24.7	24.8	24.7	24.7	24.6	24.4	24.2	24.0
25.0	25.2	25.3	25.3	25.1	25.1	24.8	24.7	24.6	24.5	24.2	24.1	24.2
24.2	24.1	24.1	23.9	24.0	24.4	24.5	24.5	24.4	24.2	24.2	24.2	23.8
26.3	25.4	24.6	24.0	24.0	24.0	24.1	24.4	24.4	24.4	24.4	24.4	24.3
26.8	26.6	26.0	24.7	23.8	23.6	24.1	24.4	24.5	24.5	24.1	23.8	24.4
24.4	24.7	25.1	25.0	24.6	23.7	23.5	22.9	22.7	23.7	22.6	21.1	23.1
26.1	25.5	24.6	24.3	23.9	23.4	23.8	24.3	24.3	24.1	24.3	24.5	24.3
26.3	25.7	25.1	24.3	23.7	23.5	23.5	23.2	24.1	23.9	24.6	24.1	23.9
25.6	25.9	25.7	25.1	24.6	24.4	24.6	24.6	24.5	24.3	24.4	24.3	23.9
25.5	25.3	24.6	23.7	23.5	(23.3)	(23.5)	(23.7)	(22.7)	(23.7)	(23.8)	(23.8)	23.6
25.5	25.5	25.5	25.0	24.7	23.9	24.3	23.9	22.9	23.5	23.9	24.3	24.0
23.5	23.5	23.5	23.8	24.0	24.1	24.1	24.1	24.0	24.1	24.1	24.0	23.5
25.2	26.1	25.7	24.2	23.7	24.2	24.4	24.5	24.6	24.6	24.5	24.5	24.1
26.3	26.9	26.1	24.6	23.9	24.0	24.2	24.2	24.3	24.4	24.5	24.5	24.1
25.5	25.0	24.6	25.0	24.6	24.3	24.2	24.6	24.3	24.4	24.3	24.5	23.8
24.9	24.9	24.5	24.8	24.5	24.6	24.5	24.4	24.6	24.6	24.9	24.5	24.0
25.4	25.6	25.3	24.8	24.4	24.1	24.2	24.2	24.1	24.1	24.1	24.0	23.9
25.4	25.7	25.4	24.8	24.3	24.2	24.4	24.4	24.4	24.3	24.2	24.2	23.9

1° WEST, PLUS TABULAR MINUTES.

27.0	26.6	25.5	24.9	24.6	24.6	24.5	23.8	23.8	23.9	24.0	24.0	24.3
26.4	26.6	26.9	26.6	26.4	25.8	25.5	25.2	25.2	25.1	25.1	25.1	24.4
25.4	24.9	25.0	25.4	25.7	25.7	25.5	25.2	25.1	25.1	25.2	25.1	24.4
28.6	27.5	26.2	25.1	25.0	25.1	25.6	24.6	24.9	25.0	24.5	24.9	25.1
26.7	26.3	26.6	26.3	26.0	24.9	24.2	24.1	24.4	24.5	24.5	24.5	24.2
26.0	25.6	25.4	25.3	24.9	24.5	24.7	24.8	24.8	24.9	24.9	25.1	24.3
26.5	26.7	26.2	25.5	24.8	25.1	25.3	22.6	24.9	25.0	25.5	25.3	24.2
26.8	27.1	26.5	26.0	25.3	24.5	24.8	24.1	23.6	23.2	23.6	24.4	23.9
27.3	27.7	26.8	26.1	25.3	24.9	24.8	24.4	24.4	24.3	25.1	25.1	24.4
26.5	27.1	26.7	26.0	25.1	25.4	24.3	24.8	24.9	25.1	25.1	25.0	24.4
27.3	26.8	26.7	26.1	25.1	25.6	24.4	25.1	25.0	25.1	25.1	24.9	24.8
27.2	26.8	26.0	24.8	23.7	24.9	25.1	24.9	25.0	25.1	25.1	25.0	24.8
26.7	26.2	25.6	25.1	24.5	25.0	25.0	24.4	25.1	25.0	25.1	25.3	24.7
27.1	27.2	26.8	26.1	25.4	25.4	25.5	25.6	25.5	25.5	25.3	25.3	25.3
27.5	27.7	26.8	26.5	26.0	25.3	25.5	25.6	(25.5)	(25.5)	(25.5)	(25.5)	25.0
26.1	25.3	25.3	25.4	25.3	25.3	25.3	25.4	25.5	25.3	25.3	25.1	24.8
26.8	26.1	25.3	24.9	25.5	24.8	25.6	25.3	25.5	25.5	25.6	25.6	25.0
27.4	26.1	25.3	24.9	25.1	25.5	25.5	25.5	25.5	25.6	25.5	25.3	25.4
28.0	27.2	25.9	25.5	25.6	24.9	24.9	24.4	24.4	24.4	24.8	24.8	24.7
27.3	27.4	27.3	26.5	25.9	25.3	25.3	25.5	25.3	25.5	25.4	25.5	25.4
27.4	26.5	26.3	26.1	25.9	25.3	25.1	25.5	25.4	25.7	25.7	25.9	25.2
28.4	28.0	27.2	26.1	25.6	25.4	25.1	24.8	24.4	24.5	23.3	25.1	25.1
27.3	27.4	27.1	26.8	26.5	25.5	25.1	25.1	23.9	25.1	25.3	25.4	25.0
26.5	26.8	26.5	26.1	25.6	25.1	25.5	25.3	25.3	25.3	25.5	25.6	25.4
27.5	27.3	27.1	26.2	25.3	25.3	25.1	25.1	25.5	25.5	25.6	25.6	25.5
26.3	26.3	26.2	26.2	26.0	25.3	25.3	25.3	25.5	25.5	25.5	25.6	25.2
26.9	27.2	27.2	26.6	26.5	25.9	26.0	25.6	25.5	25.5	25.6	25.6	25.3
25.6	26.5	26.7	26.3	26.3	26.2	26.0	26.0	26.1	25.5	25.6	25.1	25.2
25.3	25.1	25.6	26.2	26.5	25.7	25.1	25.4	25.6	25.5	25.6	25.7	25.4
25.5	25.7	25.7	24.9	25.7	25.7	25.7	25.7	25.5	25.7	25.7	26.0	25.4
26.8	26.7	26.3	25.8	25.5	25.3	25.2	25.0	25.0	25.1	25.1	25.2	24.9
26.9	26.7	26.4	25.9	25.4	25.3	25.2	25.2	25.3	25.3	25.3	25.3	25.0

Interpolated values are in parentheses.

OCTOBER, 1903.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	26.0	26.0	25.4	25.3	25.1	24.7	24.3	24.7	25.3	25.7	25.3	24.9
2.....	25.6	25.4	25.0	25.1	24.9	24.1	23.7	23.1	23.7	25.3	27.2	27.9
3*.....	25.9	25.5	25.3	25.0	25.0	24.3	24.1	23.8	23.7	24.8	25.9	26.1
4*.....	25.9	25.9	25.6	25.3	25.0	24.3	23.5	23.1	23.8	25.3	27.2	28.6
5*.....	25.9	25.4	25.3	25.3	24.4	24.3	24.1	22.7	23.6	24.5	26.1	27.1
6.....	25.6	26.2	26.0	25.6	24.5	24.5	23.2	22.6	22.9	24.8	26.0	27.3
7.....	26.5	26.5	26.3	26.5	25.3	24.8	23.7	23.5	23.5	24.4	25.3	26.0
8.....	25.5	25.5	24.9	26.7	24.7	24.1	22.6	22.1	22.5	24.9	26.8	27.3
9.....	26.4	26.4	26.3	26.1	26.1	26.0	24.9	23.0	22.1	22.1	23.3	24.9
10*.....	26.2	26.0	26.1	26.0	25.6	25.7	25.5	24.5	23.9	24.5	25.7	26.4
11*.....	25.6	26.1	26.1	26.0	25.7	25.4	24.6	24.0	23.7	24.4	25.7	26.4
12.....	26.0	25.7	25.7	25.4	25.1	25.0	(24.4)	(24.3)	24.5	25.4	26.6	27.3
13.....	27.8	26.8	25.8	26.0	27.6	27.0	25.7	25.7	26.2	25.6	25.8	26.1
14.....	25.7	26.1	26.0	26.1	27.8	27.2	27.4	26.7	25.0	25.0	26.0	26.1
15.....	26.2	26.2	26.4	26.4	26.4	26.9	26.9	25.7	26.1	26.1	26.1	25.6
16.....	26.3	26.3	26.3	26.2	26.3	26.7	26.1	24.9	24.9	25.0	25.7	26.6
17.....	26.2	26.1	26.1	26.1	26.0	26.3	26.1	25.5	25.2	25.4	25.8	25.7
18.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20*.....	26.6	26.6	26.4	26.2	26.0	26.0	24.4	23.2	23.0	23.9	26.1	27.5
21*.....	26.7	26.8	26.6	26.6	26.2	26.1	25.2	24.8	25.1	25.7	26.6	26.9
22*.....	26.7	26.6	26.6	26.3	26.1	26.0	25.1	23.9	23.4	24.5	26.1	27.6
23.....	26.8	26.9	26.8	26.8	27.3	26.6	25.8	24.4	24.0	24.8	25.8	26.3
24*.....	26.8	26.8	27.0	26.8	26.4	25.9	25.0	24.0	24.4	25.2	26.1	27.1
25.....	26.9	26.9	26.9	26.9	26.7	27.1	26.4	25.0	24.0	23.4	23.4	24.3
26.....	26.2	26.5	25.8	26.9	27.7	27.7	26.8	25.5	25.3	25.8	26.5	27.1
27.....	25.8	26.4	26.9	28.1	27.1	27.3	26.5	25.1	24.5	24.6	25.3	25.8
28*.....	26.8	26.9	26.9	26.9	26.8	26.8	26.2	25.3	25.0	24.5	25.0	25.7
29.....	26.8	26.8	26.8	26.8	26.8	26.8	25.9	25.8	25.3	25.0	25.7	26.2
30.....	26.8	26.9	27.0	27.1	26.4	26.2	25.3	24.5	24.4	24.5	25.3	26.2
31.....	27.4	27.4	30.9	27.3	33.1	38.7	22.6	32.5	23.7	30.5	25.2	25.8
Mean.....	26.3	26.3	26.3	26.3	26.3	26.3	25.0	24.6	24.2	25.0	25.8	26.5
Mean*.....	26.3	26.3	26.2	26.0	25.7	25.5	24.8	23.9	24.0	24.7	26.0	26.9

NOVEMBER, 1903.

1.....	23.4	25.8	25.3	27.3	27.1	25.8	23.7	23.1	23.1	24.4	25.3	26.2
2.....	27.1	27.3	27.7	26.8	26.8	26.7	25.9	26.2	26.2	26.4	27.3	28.2
3.....	26.8	28.9	27.4	26.8	26.4	27.4	25.8	25.1	25.3	25.8	26.9	28.0
4.....	27.6	27.4	28.9	26.4	26.5	26.8	25.0	23.8	23.1	23.8	24.9	26.2
5*.....	26.8	26.5	26.3	26.2	25.9	25.6	24.9	23.7	23.7	25.5	27.7	28.5
6.....	26.9	27.0	27.6	27.0	26.2	26.2	25.3	23.8	23.4	24.1	25.5	26.1
7.....	26.4	26.4	26.5	26.2	26.2	26.2	25.2	24.3	24.5	25.1	26.5	28.0
8.....	27.0	27.5	28.2	26.6	26.6	26.5	25.3	23.9	24.0	24.4	25.6	26.8
9.....	27.0	27.0	27.0	26.6	26.6	26.4	25.3	24.1	23.9	24.6	26.2	27.5
10.....	26.3	27.7	26.9	27.2	27.0	27.0	26.6	25.2	23.9	24.4	25.0	25.3
11*.....	26.5	26.5	27.5	27.4	27.7	27.2	26.6	24.6	23.9	23.5	25.0	25.9
12*.....	27.4	26.9	26.8	26.8	27.2	27.2	26.9	25.1	23.9	24.6	25.1	25.9
13.....	26.9	27.4	27.0	26.9	26.9	26.6	26.0	24.7	23.6	23.4	24.4	25.1
14*.....	27.0	27.0	27.0	26.9	26.9	26.9	26.0	24.7	23.9	23.9	25.0	25.9
15*.....	27.1	27.0	26.9	26.9	26.8	26.9	26.3	25.2	24.0	23.5	23.9	24.7
16.....	27.1	27.0	27.1	26.9	26.9	26.8	26.9	25.1	24.2	25.0	26.5	27.8
17.....	26.6	27.2	27.0	27.2	26.6	26.3	26.0	25.4	25.7	26.2	27.0	27.8
18.....	27.0	26.9	26.6	25.9	25.8	25.8	25.6	24.4	25.3	25.9	27.0	27.5
19.....	27.4	27.5	27.4	28.2	27.0	26.9	26.5	26.3	26.0	26.2	26.6	27.1
20.....	27.4	27.4	27.1	26.6	26.5	26.5	26.6	26.5	26.3	26.3	27.5	28.6
21.....	26.8	27.6	27.6	27.2	27.0	27.0	26.8	25.4	24.8	25.1	26.0	27.1
22.....	26.9	27.6	27.8	28.2	29.2	27.8	27.7	26.8	25.6	24.7	24.8	25.9
23.....	27.1	27.7	27.7	27.1	27.3	27.1	27.1	25.3	24.8	24.8	26.0	27.1
24*.....	27.7	27.9	27.7	27.3	27.7	27.3	27.2	26.1	25.1	25.3	25.5	26.3
25*.....	27.5	27.7	27.9	27.7	27.2	27.2	27.1	25.9	25.3	25.2	26.0	27.0
26*.....	27.1	27.5	27.3	27.2	27.6	27.0	26.9	25.4	24.3	23.7	23.7	24.8
27*.....	26.9	27.1	27.1	27.0	26.9	26.9	26.9	26.0	25.2	24.9	25.5	25.7
28.....	27.1	27.1	27.2	27.1	27.0	27.0	26.9	25.8	24.8	24.5	24.7	25.7
29.....	26.7	27.1	27.1	26.9	26.7	26.7	26.9	26.0	25.5	25.4	26.3	26.9
30*.....	27.2	27.5	27.6	27.2	27.2	27.0	27.2	26.4	25.3	25.1	26.0	27.2
Mean.....	26.9	27.2	27.3	27.0	26.9	26.8	26.2	25.1	24.6	24.9	25.8	26.7
Mean*.....	27.1	27.2	27.2	27.1	27.1	26.9	26.6	25.3	24.5	24.5	25.3	26.2

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

1° WEST, PLUS TABULAR MINUTES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
25.1	25.3	25.3	25.4	26.0	25.9	25.4	25.4	25.7	25.7	25.9	25.7	25.4
27.3	26.5	25.6	25.3	25.3	25.6	25.6	25.7	25.6	25.6	25.9	25.6	25.5
26.0	25.7	(26.5)	(26.6)	25.9	26.3	26.1	26.1	26.0	26.1	26.1	26.0	25.5
28.0	27.1	26.5	26.2	26.1	26.8	26.3	26.1	25.9	26.0	26.0	26.0	25.9
27.1	26.8	26.5	25.6	26.1	26.1	25.9	25.6	25.3	25.6	26.0	25.6	25.5
28.0	27.5	26.5	26.3	26.0	25.6	25.7	25.5	25.3	25.7	26.0	26.7	25.6
26.1	26.8	26.5	25.6	24.9	24.7	24.8	24.3	24.9	25.1	25.5	25.4	25.3
27.3	27.3	26.8	26.5	25.5	24.9	25.5	25.6	26.0	25.6	26.2	26.2	25.5
25.7	27.2	27.8	27.8	26.9	26.1	26.1	26.1	26.1	26.0	25.7	25.7	25.6
27.3	27.9	27.8	27.2	26.4	26.1	26.1	26.0	26.0	26.1	26.1	25.4	26.0
26.7	26.9	27.3	27.0	26.9	26.4	26.6	25.7	25.7	25.7	25.7	26.1	25.8
28.0	27.4	28.0	28.1	27.5	23.4	26.7	25.8	23.1	24.2	24.6	26.0	26.0
25.7	25.8	25.8	26.9	26.7	24.6	25.1	24.9	25.7	24.6	24.6	26.2	25.9
25.7	25.4	26.1	27.3	27.4	26.1	26.2	26.2	26.1	26.2	26.2	26.1	26.1
25.7	26.1	26.6	26.9	26.6	25.7	25.7	26.2	26.2	26.2	26.4	26.3	26.2
26.6	26.6	26.9	27.3	26.9	26.6	26.4	26.2	26.1	25.8	26.2	26.4	26.2
25.6	26.1	26.2	26.6	-----	-----	-----	-----	-----	-----	-----	-----	-----
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-----	27.3	27.0	26.7	26.2	26.0	25.8	26.0	26.2	26.2	26.4	26.4	-----
26.9	26.9	26.9	26.9	26.8	26.4	26.2	26.1	26.2	26.3	26.6	26.6	26.0
26.6	26.6	26.8	26.6	26.8	26.6	26.4	26.6	26.6	26.6	26.6	26.7	26.4
28.0	28.1	27.8	28.0	27.3	26.6	26.0	26.1	26.2	26.2	26.7	26.8	26.4
26.6	27.0	27.5	26.8	25.8	25.8	26.2	26.1	26.2	26.1	26.2	26.4	26.3
28.0	28.0	28.1	28.0	27.7	27.1	26.9	26.5	26.2	26.4	26.5	26.8	26.6
25.9	27.0	27.5	27.3	26.5	25.8	25.5	25.8	25.5	25.0	25.7	25.7	25.9
28.1	28.1	28.5	28.6	28.1	27.0	26.1	25.5	25.5	25.7	25.8	26.2	26.7
25.8	26.4	26.9	27.0	27.1	26.5	26.4	26.1	26.1	26.2	26.3	26.5	26.3
25.8	26.4	26.9	27.5	27.6	26.8	26.3	26.4	26.4	26.5	26.3	26.8	26.4
26.7	26.7	27.4	27.7	28.1	26.9	26.8	26.5	26.3	26.3	26.5	27.0	26.6
26.9	27.7	28.5	28.2	(27.5)	26.4	25.7	25.7	25.3	24.6	26.1	26.9	26.3
25.9	30.9	30.4	29.9	25.0	24.5	23.8	22.7	22.7	19.9	23.7	24.5	27.0
26.7	27.0	27.1	27.1	26.7	26.0	25.9	25.8	25.8	25.6	25.9	26.1	26.0
27.0	27.0	27.1	27.0	26.8	26.5	26.3	26.1	26.0	26.2	26.3	26.3	26.0

1° WEST, PLUS TABULAR MINUTES.

27.3	27.7	28.1	27.7	28.1	27.4	26.5	25.8	26.5	27.4	27.0	27.0	26.1
28.9	29.1	28.8	28.1	26.8	26.9	26.3	26.2	25.7	26.2	26.8	27.0	27.1
28.1	28.6	28.7	27.6	28.2	27.1	26.8	26.8	26.5	26.9	27.3	27.3	27.1
26.9	27.3	26.8	26.5	25.8	26.2	25.6	25.3	25.5	25.5	25.3	24.6	25.9
28.1	27.6	27.0	26.5	26.7	26.2	26.1	25.9	25.8	26.1	26.2	26.4	26.2
26.1	26.9	26.9	26.8	26.5	26.2	26.1	25.9	24.7	26.1	26.2	26.4	26.0
28.5	28.6	28.5	27.4	26.8	25.9	25.1	25.7	25.7	25.8	26.2	26.5	26.4
27.8	28.9	28.7	27.7	27.1	26.0	25.9	25.9	25.8	25.9	26.3	26.6	26.5
28.6	28.9	28.6	28.2	27.2	27.1	25.9	26.0	24.7	25.9	25.8	25.9	26.5
25.8	26.2	27.5	27.0	26.2	25.2	25.6	26.0	26.0	26.0	26.2	26.3	26.1
26.9	27.7	28.4	28.3	27.8	27.4	26.8	25.9	25.8	26.2	26.6	26.6	26.5
26.3	27.1	27.8	27.8	27.4	26.9	26.6	26.3	26.0	26.2	26.5	26.6	26.5
25.4	26.3	27.1	27.7	27.8	27.0	26.6	26.6	26.5	26.5	26.6	26.9	26.2
26.3	26.4	26.8	27.1	27.1	26.5	26.3	26.5	26.9	27.0	27.1	27.0	26.3
25.2	25.9	26.5	27.0	27.4	26.6	26.6	26.6	26.6	26.8	27.0	27.0	26.2
28.3	28.6	28.3	28.0	27.7	26.5	26.4	25.9	25.9	25.9	26.3	26.9	26.8
28.3	27.8	27.1	27.4	26.3	26.5	26.4	26.6	26.9	26.6	27.1	27.2	26.8
27.5	27.4	26.6	26.3	26.6	26.5	25.3	25.4	24.1	24.2	25.1	26.5	26.0
27.1	27.4	27.4	27.1	27.0	26.6	26.4	26.4	26.5	26.8	27.0	27.1	26.9
28.3	28.3	28.2	28.1	27.8	27.1	27.0	25.7	25.2	25.7	25.8	26.3	26.9
27.0	27.2	27.2	27.1	26.9	26.6	26.3	25.6	25.1	25.2	25.9	26.8	26.5
26.3	26.9	27.5	26.9	25.8	26.4	26.3	25.9	26.3	26.4	26.6	27.0	26.7
27.2	27.8	27.8	27.8	27.3	27.2	26.7	26.5	26.4	26.5	26.9	27.2	26.8
27.1	28.1	28.4	28.2	27.9	27.2	26.9	26.7	26.9	26.9	27.1	27.3	27.1
27.7	28.1	28.1	28.1	27.3	26.9	26.5	26.6	26.5	26.4	28.5	26.9	27.0
26.1	26.6	27.0	27.2	27.2	26.9	26.6	26.5	26.4	26.5	26.6	26.6	26.4
26.0	27.3	28.1	28.4	27.7	26.9	26.9	26.7	26.7	26.7	26.9	26.9	26.7
27.0	27.9	28.1	28.1	27.7	27.5	27.5	27.0	26.9	26.9	26.9	27.2	26.8
26.5	26.5	26.7	27.2	27.7	27.5	27.1	26.9	27.1	27.1	27.1	27.2	26.8
28.1	28.4	28.1	27.8	27.6	27.2	27.1	26.9	26.9	26.9	27.3	27.2	27.1
27.2	27.6	27.7	27.5	27.2	26.7	26.4	26.2	26.1	26.3	26.5	26.7	26.6
26.8	27.3	27.6	27.6	27.4	26.9	26.6	26.5	26.4	26.6	26.8	26.8	26.6

Interpolated values are in parentheses.

DECEMBER, 1903.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	27.6	27.6	27.5	27.5	27.1	27.6	27.8	26.4	25.2	25.9	27.0	27.8
2.....	26.0	27.1	26.0	27.3	26.6	27.1	27.3	26.4	26.0	25.9	26.6	27.2
3*.....	27.0	27.5	27.2	27.1	27.1	27.0	27.1	26.1	25.8	26.7	27.8	28.7
4.....	27.7	28.2	27.8	27.7	27.3	27.5	27.2	26.5	24.1	24.8	25.9	27.1
5.....	27.7	28.3	28.2	27.8	27.6	28.3	29.0	27.3	25.4	25.9	26.7	27.5
6.....	28.5	29.1	27.9	28.1	27.9	27.9	27.3	25.4	24.2	24.2	24.5	25.5
7.....	28.2	28.4	29.4	28.3	28.3	27.8	27.5	26.1	25.7	25.5	27.1	28.1
8.....	28.3	28.0	28.0	27.8	27.6	27.4	26.8	25.2	23.7	23.7	24.6	26.2
9*.....	27.8	27.9	27.9	27.7	27.7	27.7	27.2	26.2	25.3	24.9	25.4	27.2
10.....	28.2	28.5	28.0	28.0	27.7	27.4	27.7	26.1	24.3	23.8	24.8	27.0
11*.....	27.8	27.9	27.7	27.7	27.7	27.7	27.1	25.6	24.8	24.9	26.4	28.2
12*.....	27.7	27.8	27.8	27.7	27.7	27.7	27.4	26.2	24.4	23.8	25.6	27.7
13.....	28.0	28.0	27.9	27.8	28.0	28.0	27.7	26.2	25.5	25.4	27.3	29.0
14.....	28.4	27.7	27.3	27.2	27.2	27.6	27.6	26.8	26.4	26.1	27.2	29.1
15.....	28.0	28.3	28.2	28.0	27.9	27.9	27.8	27.1	25.8	26.2	27.4	28.3
16*.....	27.7	(27.9)	(27.9)	(27.7)	(27.7)	(27.7)	(27.6)	27.2	25.6	25.4	25.8	27.0
17.....	28.0	28.2	28.2	27.8	27.8	27.7	27.7	27.6	27.2	25.8	26.5	27.6
18.....	28.0	28.2	28.2	28.2	28.2	28.2	28.3	28.2	28.0	27.9	27.7	29.1
19.....	28.0	28.2	28.4	28.5	28.9	29.0	29.0	29.0	29.0	28.8	28.5	27.8
20.....	....	....	....	....	....	....	....	....	....	....	....	....
21.....	....	....	....	....	....	....	....	....	....	....	....	....
22.....	....	....	....	....	....	....	....	....	....	....	....	....
23.....	....	....	....	....	....	....	....	....	....	....	....	....
24*.....	27.7	27.7	27.7	27.9	27.4	27.3	27.3	26.3	26.8	25.7	26.9	29.2
25*.....	27.6	27.9	28.0	27.5	27.3	26.9	26.7	25.5	23.5	25.1	25.9	27.5
26*.....	27.3	27.3	27.5	27.6	27.5	27.1	27.3	26.4	25.7	26.1	26.9	27.6
27*.....	27.1	27.3	27.1	27.1	27.1	26.9	27.0	26.1	25.0	23.2	25.1	27.3
28*.....	26.9	26.9	26.9	27.1	27.0	27.0	27.3	26.3	25.3	25.2	25.7	26.8
29.....	27.3	27.3	27.5	27.5	27.3	27.4	27.7	26.9	26.1	25.3	25.2	25.3
30.....	28.9	28.6	28.6	29.7	29.5	30.1	30.0	28.1	25.1	23.1	23.2	25.6
31.....	25.6	25.7	27.7	26.9	27.3	27.3	27.0	26.3	25.6	25.5	25.7	26.1
Mean.....	27.7	27.8	27.8	27.8	27.6	27.7	27.6	26.5	25.5	25.4	26.2	27.5
Mean*.....	27.5	27.6	27.6	27.5	27.4	27.3	27.2	26.2	25.2	25.1	26.2	27.7

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

1° WEST, PLUS TABULAR MINUTES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
'	'	'	'	'	'	'	'	'	'	'	'	'
28.3	28.4	27.6	27.2	27.6	27.5	27.1	27.2	26.1	26.6	26.6	26.4	27.2
27.6	27.2	27.2	27.8	27.9	27.6	27.2	27.1	27.1	27.2	26.7	27.2	27.0
29.4	29.4	29.1	28.8	28.4	27.6	27.2	27.0	26.7	26.7	27.3	27.5	27.5
28.8	29.4	28.8	29.4	28.2	27.1	26.7	26.3	26.4	26.7	27.5	27.6	27.2
27.9	29.1	(28.8)	(28.5)	28.3	27.6	27.5	27.1	26.7	27.2	27.7	27.9	27.7
26.6	27.5	27.9	28.3	28.1	27.5	24.9	26.3	26.5	26.7	27.2	27.6	26.9
29.1	29.3	28.9	27.9	27.7	27.6	27.0	26.7	26.7	26.7	27.3	28.2	27.6
27.0	28.4	28.8	28.4	27.7	27.7	27.2	27.1	27.2	27.2	28.4	27.7	27.1
27.9	28.8	29.2	28.9	28.2	27.7	27.3	27.0	26.8	27.2	27.6	27.9	27.4
29.1	30.1	30.1	29.2	28.3	27.7	27.6	27.3	26.8	27.2	27.4	27.7	27.5
29.5	29.7	29.8	29.2	28.4	27.9	27.7	27.7	27.7	27.6	27.7	27.7	27.7
29.4	29.8	29.5	28.8	27.9	27.7	27.3	27.3	27.2	27.6	27.7	27.7	27.5
30.1	30.3	30.7	30.3	30.3	30.4	29.6	27.6	26.8	26.7	27.2	27.3	28.2
29.6	29.6	29.5	28.9	28.0	27.8	27.7	27.6	27.4	27.6	27.7	27.8	27.8
28.6	28.9	29.2	29.0	28.4	28.0	27.9	27.8	27.3	27.6	27.6	27.7	27.9
27.8	28.2	28.5	28.4	28.2	27.8	27.8	27.7	27.7	28.0	28.0	28.0	27.6
27.8	27.9	28.4	28.5	28.3	27.9	27.8	27.7	27.7	27.9	28.0	28.2	27.8
29.7	29.8	29.6	28.9	28.0	27.7	27.6	27.7	27.6	27.8	27.9	27.8	28.3
29.4	30.0	29.6	29.0	28.3	28.0	27.3	27.6	27.3	27.6	27.9	28.4	28.5
....
....
....
....
30.1	30.1	29.3	28.6	27.9	27.3	26.9	27.1	26.9	26.9	27.1	27.4	27.6
28.9	29.3	28.9	28.5	27.7	27.1	27.1	27.1	26.9	27.0	27.3	27.3	27.2
28.8	29.3	29.2	28.3	27.6	27.1	26.9	26.8	26.4	26.8	26.9	26.9	27.3
28.1	28.7	28.8	28.3	27.7	26.9	26.9	26.7	26.7	26.8	26.9	26.9	26.9
28.5	29.5	30.0	28.9	28.1	27.6	27.1	26.9	26.8	26.8	26.8	27.0	27.2
26.5	27.7	28.1	27.7	28.0	27.6	27.1	27.1	27.0	27.3	27.3	26.3	27.0
27.6	28.8	29.2	28.6	28.1	28.0	27.7	28.8	26.9	26.8	26.5	25.9	27.6
26.8	27.6	26.4	27.4	27.7	27.5	27.3	27.3	26.7	27.6	27.6	27.3	26.8
28.5	29.0	28.9	28.6	28.1	27.7	27.3	27.2	27.0	27.2	27.4	27.5	27.5
28.8	29.3	29.2	28.7	28.0	27.5	27.2	27.1	27.0	27.1	27.3	27.4	27.4

Interpolated values are in parentheses.

JANUARY, 1904.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	29.3	28.7	27.9	28.5	26.9	27.7	27.3	26.1	24.9	25.3	26.7	28.0
2*.....	27.6	28.0	28.0	27.7	28.1	27.1	27.0	25.7	24.7	25.2	27.0	27.6
3.....	28.0	28.0	27.9	27.7	27.7	29.1	27.7	26.4	24.7	25.0	26.2	27.3
4.....	28.0	28.5	28.6	28.0	27.6	28.7	27.6	26.5	25.2	25.1	26.1	27.7
5.....	28.0	28.0	28.0	28.3	27.6	28.0	27.5	25.9	25.1	25.8	26.9	27.3
6.....	28.1	28.1	28.0	28.7	28.5	27.6	27.6	26.1	25.1	25.6	27.6	28.1
7*.....	27.7	28.0	27.7	27.7	27.7	27.3	27.3	25.0	24.9	25.7	28.5	30.0
8*.....	27.6	27.7	27.7	27.5	27.6	27.5	27.0	25.2	23.9	25.5	28.0	29.3
9.....	27.7	28.0	28.1	27.7	27.7	27.5	27.3	25.5	23.9	24.7	27.4	28.9
10.....	27.6	27.6	27.6	27.7	26.9	27.5	26.2	24.4	23.3	23.8	25.3	27.6
11.....	27.6	28.1	28.0	28.3	28.3	27.9	27.9	26.9	26.1	26.9	28.6	29.1
12*.....	27.6	27.8	27.9	27.9	28.0	28.0	27.5	26.2	23.6	23.4	24.9	28.4
13.....	27.8	27.8	27.9	28.1	28.1	28.3	28.4	26.3	23.9	23.1	26.2	28.7
14.....	28.3	28.4	28.4	28.3	28.3	27.8	27.6	25.4	23.8	24.8	27.7	30.0
15.....	28.1	28.1	28.1	27.9	27.9	27.9	27.7	26.1	24.3	24.3	26.5	29.3
16.....	27.5	27.6	27.5	27.4	28.0	28.4	28.4	28.3	26.5	26.8	26.4	29.3
17.....	28.7	29.1	29.4	28.6	28.3	28.1	27.9	26.5	25.5	25.6	27.9	29.2
18.....	28.5	28.6	28.6	28.7	28.1	28.0	27.6	25.6	24.2	25.0	27.0	28.5
19*.....	28.5	28.5	28.5	28.4	28.1	28.0	27.4	26.1	24.9	25.3	27.1	29.7
20*.....	28.4	28.6	28.8	28.6	28.6	28.3	27.8	26.6	25.8	25.4	28.2	31.0
21.....	29.5	28.7	28.7	28.1	28.3	28.1	28.1	26.7	25.4	25.1	27.8	29.0
22.....	27.8	28.2	28.1	27.2	27.7	27.4	27.5	26.2	25.6	25.4	28.1	31.4
23*.....	28.1	28.3	28.3	28.2	28.1	28.0	27.3	25.9	24.0	25.1	28.0	29.7
24*.....	28.0	28.0	28.0	28.1	28.0	27.9	27.9	26.8	25.8	24.9	26.1	29.1
25*.....	28.1	28.3	28.5	28.5	28.3	27.9	27.9	26.7	25.3	24.3	27.1	29.1
26.....	27.8	28.2	28.4	28.2	28.2	28.0	27.8	26.5	25.3	24.6	25.8	28.9
27.....	28.3	28.5	28.9	28.7	28.1	28.3	28.3	27.5	25.7	24.8	25.4	27.1
28.....	28.1	28.3	28.3	28.3	28.3	28.1	28.8	27.4	25.7	23.6	24.7	26.2
29.....	28.3	29.1	28.9	28.2	30.4	29.2	29.8	27.5	25.8	25.5	25.8	26.4
30.....	28.2	27.8	28.2	27.6	28.2	28.5	28.0	27.6	25.2	24.6	24.9	27.0
31.....	28.5	28.9	28.6	28.4	28.4	28.1	28.0	27.8	26.1	25.6	26.7	29.8
Mean.....	28.1	28.2	28.2	28.1	28.1	28.0	27.7	26.4	25.0	25.0	26.8	28.7
Mean*.....	28.0	28.2	28.2	28.1	28.1	27.8	27.5	26.0	24.7	25.0	27.2	29.2

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1.....	28.4	28.9	29.0	29.1	28.9	28.6	28.2	27.3	25.9	25.5	26.4	27.6
2*.....	28.9	28.9	29.1	29.4	29.7	29.2	28.8	27.2	26.2	26.2	26.8	28.0
3*.....	28.8	28.8	28.9	28.8	28.7	28.5	28.5	27.3	25.8	24.7	25.4	28.3
4.....	29.1	29.3	29.1	29.0	28.7	28.7	28.5	26.5	24.9	25.1	26.0	28.7
5.....	28.8	29.1	29.7	29.3	28.8	28.3	27.9	26.4	25.4	25.7	27.0	28.7
6.....	28.1	28.0	28.4	28.2	28.0	28.0	27.7	26.9	25.3	25.0	25.0	27.0
7.....	27.8	28.1	28.2	28.4	27.7	27.6	27.8	27.0	25.9	25.6	26.5	27.7
8.....	28.0	28.7	28.2	28.2	27.6	27.8	28.4	27.5	27.0	26.0	26.6	27.5
9.....	27.9	27.9	28.5	28.6	28.3	28.3	29.1	28.1	27.1	27.1	26.1	26.5
10.....	27.7	27.7	27.7	27.9	28.1	27.3	28.3	27.7	27.1	26.5	26.8	27.7
11*.....	28.1	28.1	28.1	28.3	28.2	28.3	28.9	28.0	26.9	26.1	25.9	26.4
12*.....	28.2	28.2	28.0	28.0	28.4	28.6	28.2	27.0	26.2	26.0	26.4	26.4
13.....	27.8	27.9	28.5	27.9	28.0	28.1	28.7	28.2	27.2	26.4	26.8	28.0
14.....	28.6	28.5	28.5	28.2	28.2	28.1	28.0	27.4	26.2	26.9	27.5	29.6
15.....	29.1	29.1	28.7	28.4	28.1	28.1	28.6	27.9	26.9	26.7	27.3	28.7
16.....	29.5	27.8	28.6	28.6	28.1	27.9	27.9	26.2	24.7	24.3	24.7	27.4
17.....	28.7	28.6	28.6	28.3	28.4	28.3	28.3	27.2	26.7	25.9	26.3	27.4
18*.....	28.6	28.6	28.5	28.5	28.6	28.3	28.3	26.5	24.8	24.3	25.0	27.2
19*.....	28.6	28.6	28.6	28.6	28.3	28.2	28.3	26.7	25.3	24.8	26.1	28.2
20*.....	28.5	28.5	28.5	28.3	28.2	27.8	28.3	27.4	25.9	24.9	25.4	27.1
21.....	28.8	28.8	28.6	28.6	28.5	28.6	29.2	28.2	26.6	24.9	24.7	27.0
22.....	29.0	29.0	29.0	28.9	29.0	28.9	29.1	28.5	27.3	26.5	26.5	27.7
23.....	28.5	28.8	29.0	28.6	28.5	28.5	28.8	27.8	26.2	25.4	25.3	25.8
24*.....	28.5	28.4	28.8	29.3	28.9	28.8	28.9	28.2	27.2	26.6	27.0	28.3
25.....	28.8	28.9	28.9	28.8	28.5	28.5	29.1	28.7	27.6	27.1	27.5	28.5
26*.....	28.8	28.8	29.3	28.8	29.0	29.0	29.3	28.4	26.9	26.3	26.0	26.7
27.....	28.9	28.9	28.8	28.7	28.8	29.0	29.1	28.3	27.5	27.2	27.0	27.7
28.....	28.9	28.9	29.0	29.0	29.0	28.9	28.9	28.5	27.7	27.7	28.4	29.7
29*.....	29.2	29.2	29.2	29.3	28.8	28.8	28.4	26.9	26.4	26.6	27.4	28.3
Mean.....	28.6	28.6	28.7	28.6	28.5	28.4	28.5	27.5	26.4	25.9	26.3	27.7
Mean*.....	28.6	28.6	28.7	28.7	28.7	28.6	28.6	27.4	26.2	25.6	26.1	27.5

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

1° WEST, PLUS TABULAR MINUTES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
29.2	29.3	28.3	27.9	27.5	27.7	27.7	26.9	27.3	27.6	27.6	28.1	27.6
28.2	28.9	28.2	28.7	28.0	27.6	27.4	27.3	27.1	27.3	27.6	27.6	27.4
28.6	29.7	29.7	29.3	27.9	27.3	27.3	26.8	26.9	26.4	26.9	27.6	27.5
28.3	28.9	28.8	28.8	28.5	27.7	27.5	26.4	27.0	27.3	27.6	28.5	27.6
28.1	28.7	28.5	28.2	28.1	28.1	27.4	27.1	26.9	27.4	27.4	28.5	27.5
28.5	27.9	27.6	27.6	27.7	27.7	27.6	27.5	27.4	27.6	27.6	27.7	27.6
30.5	29.9	29.3	28.8	28.1	27.6	27.3	27.1	26.8	27.3	27.3	27.4	27.7
29.5	29.8	29.5	28.8	28.1	27.7	27.4	27.3	27.3	27.3	27.4	27.6	27.6
30.5	31.7	30.1	28.1	27.6	27.6	26.2	26.7	26.8	26.7	26.8	27.5	27.5
29.3	30.1	30.0	29.5	28.5	28.1	27.9	27.7	28.1	27.5	27.3	27.7	27.4
30.1	31.7	32.1	30.9	29.3	29.2	28.8	28.0	27.7	27.9	27.7	27.7	28.5
30.3	31.2	30.8	29.7	28.8	28.7	28.4	28.4	28.2	27.9	27.9	27.9	27.9
30.3	30.7	29.8	29.5	29.1	29.1	28.7	28.5	28.1	28.1	28.1	28.4	28.0
30.2	28.9	29.4	28.2	28.0	28.5	28.2	28.0	27.8	27.9	28.0	28.2	27.9
29.6	29.9	29.0	28.2	28.1	28.2	27.8	27.8	30.2	26.1	27.3	27.5	27.7
29.5	29.5	28.8	28.2	28.4	28.1	27.6	27.6	28.0	28.0	28.3	28.7	28.0
29.3	28.9	28.5	28.0	27.9	27.4	27.5	27.5	27.5	27.9	27.9	28.3	28.0
29.3	29.4	29.2	28.4	28.1	28.0	27.8	27.9	27.9	28.1	28.2	28.5	27.9
30.8	30.9	29.7	28.4	27.7	27.8	28.0	28.0	28.0	28.0	28.1	28.4	28.1
31.0	30.7	29.5	28.4	28.0	28.4	28.0	27.9	27.9	28.0	28.5	28.8	28.4
29.4	29.3	29.1	29.4	29.4	28.5	28.3	27.5	27.1	27.8	27.7	28.3	28.1
32.9	32.9	31.9	30.2	28.9	28.3	27.8	27.7	27.4	27.7	27.8	28.2	28.4
30.7	30.4	29.7	29.2	28.5	28.1	28.1	28.1	27.7	27.7	28.0	28.0	28.0
31.1	31.6	30.8	29.4	28.4	28.0	27.8	27.6	27.6	27.9	27.9	28.0	28.1
30.2	30.3	30.2	29.5	28.6	28.6	28.3	27.9	27.1	27.8	27.8	27.9	28.1
30.6	31.4	30.8	29.2	28.5	28.2	28.2	28.2	28.0	28.0	28.0	28.4	28.1
28.4	28.8	28.5	28.5	28.8	28.5	28.1	27.7	27.7	27.7	27.8	27.8	27.8
28.8	30.4	30.0	29.0	28.6	28.4	28.0	27.6	27.5	27.4	27.6	27.2	27.8
28.0	29.3	29.3	28.9	28.5	28.3	27.3	27.5	27.9	28.0	28.2	28.3	28.1
29.1	29.3	28.8	27.9	27.9	27.4	27.9	27.9	27.9	28.0	28.2	28.2	27.7
30.3	30.1	29.3	28.9	28.6	28.5	28.1	27.9	27.8	28.0	28.9	28.6	28.3
29.7	30.0	29.5	28.8	28.3	28.1	27.8	27.6	27.6	27.6	27.8	28.0	27.9
30.2	30.3	29.7	28.9	28.2	28.0	27.8	27.8	27.6	27.7	27.9	28.0	27.9

1° WEST, PLUS TABULAR MINUTES.

27.9	27.9	28.3	28.4	28.6	27.4	27.7	27.7	27.8	27.9	28.3	28.8	27.9
28.8	29.1	29.0	29.1	28.9	28.4	28.4	28.3	28.0	28.5	28.8	28.9	28.4
30.9	31.2	30.5	29.3	28.7	28.7	28.4	28.3	28.3	28.3	28.5	29.0	28.4
30.2	30.8	30.5	29.5	28.5	28.2	27.9	27.3	25.5	27.5	27.9	28.3	28.2
30.1	30.3	29.4	28.8	28.3	28.3	27.5	27.5	26.4	27.3	27.8	28.2	28.1
28.6	29.6	30.8	29.3	28.9	28.4	27.8	27.1	27.0	27.0	27.0	27.8	27.7
28.4	29.3	29.8	29.2	29.0	27.5	27.8	27.8	27.6	27.7	27.7	27.5	27.8
28.8	29.6	29.9	30.5	29.9	29.0	28.1	28.1	27.8	27.5	27.8	27.8	28.2
27.3	28.6	29.3	29.5	29.7	28.8	28.1	28.1	28.0	28.1	27.5	28.0	28.1
28.6	29.1	28.9	29.3	29.7	28.9	28.5	28.1	28.1	28.0	27.7	28.0	28.1
26.8	27.6	29.2	30.3	30.1	28.5	28.6	28.2	28.0	28.1	28.1	28.1	28.0
27.3	28.5	29.9	30.6	30.3	29.3	28.5	27.8	28.0	27.9	27.9	27.9	28.1
28.0	27.5	27.2	27.6	28.8	28.5	28.1	27.6	27.5	27.9	28.0	28.4	27.9
29.9	29.6	29.2	29.1	29.2	29.1	28.5	28.2	27.6	28.4	29.6	28.8	28.5
29.0	28.7	28.6	28.7	29.0	28.7	28.7	28.7	28.7	29.1	29.5	30.2	28.6
30.3	30.5	30.2	28.7	28.4	27.9	27.8	27.2	27.7	27.9	28.4	28.4	27.9
28.4	29.5	30.3	30.5	29.9	28.9	28.7	28.4	28.3	28.4	28.4	28.6	28.4
29.0	30.3	30.3	29.7	29.0	28.7	28.6	28.4	28.3	28.4	28.4	28.7	28.1
29.4	30.1	29.8	29.2	29.0	29.0	28.8	28.5	28.4	28.3	28.4	28.6	28.2
29.0	30.0	30.1	29.6	29.4	29.4	28.9	28.6	28.5	28.5	28.5	28.6	28.2
28.9	30.6	30.9	30.6	29.8	29.4	29.0	28.9	28.5	28.5	28.5	28.5	28.5
29.4	30.6	31.0	30.9	30.9	30.0	29.4	29.0	28.6	28.3	28.4	28.3	28.9
27.2	28.5	29.1	29.4	29.0	28.9	28.8	28.5	28.3	28.0	28.2	28.5	28.1
29.7	30.5	30.5	29.9	29.7	29.4	29.3	28.9	28.4	28.4	28.2	28.4	28.8
29.3	29.6	29.7	29.6	29.3	28.9	28.5	28.5	28.5	28.4	28.4	28.4	28.7
27.9	29.4	30.1	29.9	29.5	28.9	28.5	28.5	28.4	28.5	28.7	28.9	28.5
28.5	29.3	29.6	29.3	29.1	29.0	29.0	29.1	29.1	28.9	29.0	28.9	28.7
30.3	30.8	30.8	30.0	29.3	29.1	29.3	29.3	29.3	29.3	29.4	29.4	29.2
28.7	29.2	29.6	29.5	29.3	29.3	29.5	29.2	29.3	29.2	29.4	29.4	28.8
28.8	29.5	29.7	29.5	29.3	28.8	28.5	28.3	28.1	28.2	28.4	28.5	28.3
28.8	29.6	29.9	29.7	29.4	29.0	28.8	28.5	28.4	28.4	28.5	28.6	28.4

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Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	29.4	29.4	29.4	29.3	29.3	29.3	29.6	28.2	27.7	28.0	28.8	29.9
2*.....	28.9	28.8	28.8	28.7	28.8	29.0	28.7	27.8	27.1	26.8	27.6	28.7
3.....	28.8	29.4	29.4	29.2	28.9	28.9	28.7	28.4	27.0	26.5	27.1	28.8
4.....	28.8	28.9	29.0	28.3	28.1	28.7	28.2	27.1	25.9	26.2	27.5	29.4
5.....	28.6	27.9	30.1	28.6	28.2	28.9	28.5	27.5	27.0	26.7	26.8	27.4
6*.....	28.9	28.9	28.9	28.9	29.1	29.1	28.9	28.2	27.1	26.7	26.9	28.0
7.....	29.3	28.9	29.2	29.2	29.1	29.1	29.3	28.6	28.0	27.4	26.9	26.7
8.....	29.1	28.9	28.9	29.7	28.8	28.8	28.6	28.2	27.5	27.1	27.4	27.0
9.....	29.1	29.2	28.7	28.7	28.9	29.1	29.2	28.3	27.7	27.0	28.0	28.2
10.....	29.0	28.5	28.6	28.6	28.6	28.6	28.1	27.6	26.6	26.9	27.8	28.5
11.....	29.2	29.0	29.2	29.2	29.0	29.1	28.6	27.6	27.0	27.6	28.2	28.8
12.....	29.3	29.1	29.2	29.6	30.0	29.3	29.2	29.2	28.8	29.1	29.4	29.4
13*.....	29.2	29.1	29.0	29.1	29.1	28.6	28.0	27.2	26.9	27.3	28.2	29.1
14*.....	29.4	29.6	29.6	29.4	29.2	28.8	28.2	27.4	27.8	28.2	29.7	30.9
15*.....	29.6	29.5	29.5	29.2	28.9	28.7	27.3	25.9	24.9	24.9	26.8	29.2
16*.....	29.7	29.6	29.5	29.2	29.1	29.0	28.4	27.7	27.2	27.5	28.7	30.3
17.....	29.3	29.2	29.2	29.0	28.7	28.3	26.9	24.8	23.9	26.0	29.2	30.8
18*.....	29.8	29.8	29.6	29.5	29.5	29.1	27.4	26.3	26.9	28.5	29.9	30.4
19.....	29.7	29.7	29.6	29.3	29.1	28.7	27.9	26.7	26.8	27.7	28.9	29.7
20.....	29.5	29.4	29.4	29.4	29.1	28.6	27.9	27.6	27.4	27.9	29.4	30.1
21*.....	29.5	29.5	29.5	29.4	29.2	28.8	28.3	27.6	27.0	27.9	28.4	28.9
22*.....	29.4	29.4	29.2	29.1	29.0	28.9	28.3	27.4	27.1	27.8	28.5	29.2
23.....	29.7	29.6	29.5	29.6	29.4	29.0	28.4	27.4	26.7	27.1	28.2	28.8
24.....	29.5	29.4	29.2	29.2	29.0	28.8	27.8	26.5	25.8	25.9	26.6	27.6
25.....	29.3	29.3	29.3	29.3	29.3	29.1	28.8	28.4	28.2	28.5	28.8	29.4
26.....	28.2	28.9	29.0	29.0	29.0	29.0	28.8	26.9	26.6	27.8	27.7	28.3
27.....	29.0	29.1	29.4	29.5	29.4	29.4	29.7	28.5	28.4	28.5	28.3	28.8
28*.....	29.4	29.4	29.4	29.4	29.3	29.0	27.7	26.6	26.0	26.6	27.7	29.6
29.....	29.5	29.5	29.5	29.4	29.4	29.3	28.2	26.9	25.9	27.0	28.2	30.1
30.....	29.4	29.4	29.3	29.0	28.8	28.1	26.6	26.6	27.5	28.1	29.6	31.1
31.....	29.5	29.4	29.4	29.4	29.3	28.8	27.4	26.3	26.2	27.0	28.8	30.6
Mean.....	29.3	29.2	29.3	29.2	29.1	28.9	28.3	27.4	26.9	27.3	28.2	29.2
Mean*.....	29.5	29.4	29.3	29.2	29.1	28.9	28.1	27.3	26.8	27.2	28.2	29.4

APRIL, 1904.

1.....	28.4	28.4	28.6	28.0	29.6	28.6	29.3	26.2	26.3	28.1	28.8	30.2
2.....	28.0	28.4	28.9	28.4	28.7	28.8	26.6	27.4	27.0	26.6	27.7	30.5
3.....	29.5	29.2	29.3	29.3	29.5	29.5	27.8	26.2	25.3	26.3	28.1	30.8
4.....	29.5	29.4	29.4	28.9	29.5	28.2	27.5	27.0	26.4	26.8	27.3	28.5
5*.....	29.7	29.7	29.7	29.9	29.9	29.9	28.8	27.5	26.4	25.9	25.7	26.9
6.....	29.4	29.4	29.5	29.5	29.5	28.3	27.6	27.6	27.5	27.5	28.8	30.5
7.....	29.8	29.8	(29.4)	(29.1)	(28.8)	(28.2)	(27.3)	27.6	24.9	24.3	25.2	27.1
8*.....	28.9	29.5	29.5	29.5	29.5	29.1	28.2	26.9	26.5	26.8	27.5	29.8
9.....	29.2	29.2	29.2	29.1	29.0	28.7	28.0	26.8	26.6	26.4	28.0	29.9
10.....	29.7	29.7	29.4	29.3	29.4	28.6	27.9	27.6	27.8	28.0	28.4	29.6
11.....	29.9	29.6	29.4	29.3	29.3	28.7	27.3	27.0	26.4	26.0	26.8	28.8
12*.....	29.7	29.6	29.4	29.2	29.2	28.6	27.2	26.4	26.3	27.0	28.0	29.6
13*.....	29.6	29.6	29.6	29.2	29.6	29.0	27.6	27.2	26.7	26.6	27.9	29.8
14*.....	29.6	29.5	29.3	29.3	29.1	29.1	28.5	27.4	26.9	27.1	27.9	29.5
15*.....	29.9	29.8	29.7	29.8	29.9	29.2	28.0	27.5	25.9	25.0	25.5	27.9
16*.....	30.1	29.8	29.7	29.6	29.6	29.3	27.9	26.6	26.2	26.3	27.4	30.2
17.....	30.2	30.1	29.8	29.6	29.5	(28.7)	(27.7)	(26.9)	26.3	25.9	26.5	28.3
18.....	29.5	29.7	29.1	29.7	29.5	28.6	27.5	26.1	25.9	26.7	28.5	30.4
19.....	29.4	29.2	29.5	29.7	30.1	30.4	31.0	29.5	28.4	27.9	27.0	26.6
20.....	30.1	30.0	30.0	29.7	29.5	29.0	28.4	28.6	28.5	28.9	28.8	28.4
21*.....	30.1	29.7	29.4	29.2	28.9	28.9	28.5	28.5	27.6	26.6	25.8	26.2
22.....	29.7	29.7	29.5	29.4	29.4	29.2	28.6	28.6	28.2	28.0	28.8	29.4
23.....	30.4	30.3	30.2	30.0	29.7	29.4	28.6	28.8	28.8	28.2	28.2	28.9
24.....	29.9	30.3	28.9	28.3	28.4	28.4	27.9	27.9	27.7	27.9	28.1	28.3
25.....	29.6	29.5	29.5	29.4	29.3	29.1	29.1	29.9	30.3	31.1	30.8	30.2
26.....	28.8	28.7	29.7	28.9	28.8	28.8	28.3	28.7	29.6	29.9	30.0	30.3
27.....	30.2	30.0	29.9	29.9	29.6	29.3	29.1	30.3	31.5	32.0	31.9	32.1
28*.....	30.5	30.5	30.0	29.5	29.3	28.4	27.3	27.6	27.9	28.8	29.3	29.9
29*.....	30.4	30.4	29.8	29.5	29.2	28.3	28.1	28.8	30.1	30.7	31.1	31.9
30.....	30.2	29.9	29.6	29.4	28.8	28.7	27.2	27.5	27.5	28.3	29.2	30.5
Mean.....	29.7	29.6	29.5	29.3	29.3	28.9	28.1	27.7	27.4	27.5	28.1	29.4
Mean*.....	29.8	29.8	29.6	29.5	29.4	29.0	28.0	27.4	27.0	27.1	27.6	29.2

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

HOURLY VALUES OF DECLINATION.

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1° WEST, PLUS TABULAR MINUTES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
29.9	30.0	29.6	29.2	28.7	28.8	28.7	28.7	28.7	28.8	28.8	28.9	29.0
30.0	30.5	30.7	30.0	29.0	28.8	28.9	28.7	28.7	28.7	28.8	28.6	28.8
30.1	31.6	31.6	31.0	29.8	28.7	29.4	28.6	28.6	28.2	28.0	28.7	29.0
31.0	31.8	31.7	30.6	29.8	29.3	28.9	27.5	26.4	28.3	27.8	28.2	28.6
28.2	29.4	30.6	30.7	30.3	29.8	29.3	29.1	28.9	28.8	28.8	28.9	28.7
28.9	30.1	30.6	30.9	30.0	29.7	29.4	29.3	28.6	28.9	28.9	28.9	28.9
27.3	29.4	30.9	30.6	30.1	29.4	29.4	29.3	28.9	28.9	28.9	28.9	28.9
27.9	28.9	29.3	29.7	29.5	29.5	29.4	29.2	29.1	29.1	29.1	29.2	28.7
28.7	29.4	30.1	29.9	30.0	29.8	29.5	29.2	29.1	28.7	28.7	28.9	28.9
28.8	29.8	29.9	29.7	29.8	30.2	29.8	29.4	29.4	28.6	29.2	29.1	28.8
28.8	29.4	29.6	29.4	29.8	29.8	29.3	29.3	29.0	28.6	28.6	29.3	28.9
30.0	30.4	30.2	30.2	30.0	29.8	29.3	29.2	29.2	29.1	29.1	29.1	29.4
30.2	30.5	30.5	30.3	30.0	29.7	29.7	29.1	29.2	29.3	29.4	29.3	29.1
31.7	31.7	31.2	30.5	30.0	29.7	29.6	29.6	29.3	29.3	29.6	29.7	29.6
31.0	31.1	30.4	29.8	29.7	29.9	29.7	29.7	29.6	29.6	29.6	29.7	28.9
31.3	30.9	30.1	29.9	29.8	29.7	29.5	29.2	29.2	29.2	29.3	29.3	29.3
31.1	31.3	30.3	29.6	29.2	29.7	29.9	29.9	29.7	29.7	29.7	29.8	29.0
31.1	31.5	31.0	30.8	30.7	30.4	30.2	29.8	29.7	29.7	29.7	29.7	29.6
30.9	31.6	31.1	30.7	29.8	29.6	29.7	29.6	29.2	29.5	29.2	29.2	29.3
30.9	31.8	31.6	30.8	29.8	29.5	29.5	29.5	29.4	29.4	29.4	29.4	29.4
29.1	29.6	30.3	30.7	30.4	29.8	29.5	29.5	29.4	29.2	29.4	29.4	29.2
29.8	29.8	30.1	29.8	29.8	30.1	30.1	29.8	29.8	29.8	29.7	29.7	29.2
29.6	30.3	30.7	30.9	30.6	30.3	29.7	29.6	29.5	29.5	29.5	29.5	29.3
29.0	30.7	31.4	31.8	31.3	30.4	30.1	29.8	29.6	29.6	29.4	29.4	29.1
30.1	30.7	31.3	31.4	30.9	30.6	30.2	30.1	29.9	29.6	29.5	29.6	29.6
29.5	30.6	30.3	30.2	30.0	29.7	29.9	29.9	29.7	29.5	29.5	29.0	29.0
30.0	31.2	31.3	31.2	30.5	30.2	30.1	29.9	29.7	29.7	29.6	29.5	29.6
31.3	32.1	31.8	30.9	30.6	30.6	30.2	30.1	29.7	29.7	29.9	29.7	29.5
31.4	31.8	30.9	29.7	29.5	29.7	29.9	29.9	29.7	29.6	29.4	29.5	29.4
32.0	32.6	32.0	31.1	29.0	29.0	29.6	29.6	29.6	29.5	28.6	29.5	29.4
31.6	32.2	31.4	30.1	29.6	29.9	30.1	30.0	29.6	28.4	28.8	28.4	29.3
30.0	30.7	30.7	30.4	29.9	29.7	29.6	29.4	29.2	29.2	29.2	29.2	29.1
30.4	30.8	30.7	30.4	30.0	29.8	29.7	29.5	29.3	29.3	29.3	29.4	29.2

1° WEST, PLUS TABULAR MINUTES.

33.2	33.2	34.0	31.6	30.5	28.7	29.4	29.4	28.9	28.9	28.4	27.7	29.4
32.4	33.0	32.3	30.5	29.6	29.6	28.8	29.3	28.6	29.4	29.6	29.4	29.2
33.2	34.6	34.7	32.8	31.1	29.2	28.9	28.0	28.8	28.8	29.3	28.9	29.5
30.0	32.3	33.0	33.0	31.9	30.4	29.3	29.7	29.3	29.2	29.2	28.7	29.4
28.5	30.5	32.1	31.9	31.1	30.1	29.9	29.8	29.5	29.3	29.4	29.4	29.2
31.9	32.9	33.6	32.7	31.3	(30.9)	(30.6)	(30.3)	29.9	29.9	29.8	29.8	29.9
29.5	30.9	31.9	32.1	31.5	31.1	30.6	29.7	28.8	28.8	28.8	29.3	28.9
31.8	32.4	32.4	31.1	30.0	29.7	29.7	29.5	29.5	29.3	29.1	29.3	29.4
31.8	32.0	31.2	30.0	29.2	29.6	29.8	28.2	28.7	29.8	29.9	29.8	29.2
30.6	31.1	31.8	31.8	30.8	30.9	30.6	30.3	29.1	29.0	28.8	28.8	29.5
30.3	31.5	32.2	31.1	30.4	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.3
30.8	30.8	30.3	29.9	29.2	29.6	29.9	30.0	30.0	29.0	29.6	29.6	29.1
31.5	32.1	32.3	31.6	30.4	29.2	29.2	29.7	29.8	29.7	29.7	29.7	29.5
30.7	31.0	31.0	30.3	29.6	29.6	29.7	29.8	29.9	29.9	29.9	29.8	29.4
30.7	31.4	31.9	31.5	30.7	30.3	30.4	30.4	30.4	30.3	29.9	29.9	29.4
32.0	32.7	32.7	31.4	30.3	30.2	30.2	29.9	30.1	29.9	29.9	30.3	29.7
30.7	32.7	33.8	32.9	31.1	30.4	30.4	30.4	30.5	30.3	30.2	29.7	29.7
32.0	33.3	34.0	33.3	32.5	32.5	30.9	29.8	29.8	29.0	29.2	29.3	29.9
28.2	28.8	29.4	29.8	30.0	30.0	30.1	30.0	30.1	30.1	30.2	30.2	29.4
28.9	30.4	31.3	31.3	30.9	30.6	30.4	30.4	30.1	30.1	30.0	30.0	29.8
27.9	29.7	31.6	32.0	31.4	31.3	30.9	30.7	30.6	30.4	30.3	30.1	29.4
30.3	31.4	33.4	33.1	32.4	31.5	31.3	31.3	30.8	30.6	30.4	30.4	30.2
29.4	30.6	31.5	31.8	31.0	30.8	30.7	30.8	30.7	30.4	30.3	30.1	30.0
29.1	30.2	31.1	30.8	30.6	30.7	30.7	30.7	30.3	30.2	30.1	29.7	29.4
30.7	31.1	30.7	30.3	30.0	30.0	29.6	30.0	30.0	30.1	29.3	29.7	30.0
31.2	31.4	31.2	30.9	30.6	30.3	30.0	30.1	30.3	30.3	30.2	30.2	29.9
32.9	32.7	32.3	31.1	30.3	30.1	30.1	30.2	30.5	30.5	30.2	30.3	30.7
31.1	32.0	31.8	30.7	29.9	30.0	30.2	30.5	30.5	30.5	30.5	30.5	29.9
32.6	33.4	32.9	31.9	30.7	29.9	30.2	29.9	30.2	29.4	30.4	30.4	30.4
31.9	32.9	32.3	31.3	(30.8)	(30.2)	30.1	30.2	30.2	30.2	30.5	29.8	29.9
30.9	31.8	32.2	31.5	30.7	30.2	30.1	30.0	29.9	29.8	29.8	29.7	29.6
30.8	31.6	31.9	31.2	30.3	30.0	30.0	30.0	30.0	29.8	29.9	29.9	29.5

Interpolated values are in parentheses.

MAY, 1904.

Day.	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.
1	29.9	29.9	30.2	28.8	28.7	27.7	27.0	26.9	26.6	27.6	28.8	31.1
2	30.4	30.2	30.0	30.5	30.0	29.2	28.0	27.0	26.9	28.2	30.1	31.6
3*	30.6	30.1	29.6	29.9	29.6	28.8	27.4	27.5	27.5	27.7	28.7	30.2
4	30.1	30.1	29.8	29.8	29.8	29.8	28.9	28.5	28.5	28.2	28.9	30.5
5	29.9	30.0	29.7	29.7	29.7	29.5	29.1	29.3	29.4	29.7	29.8	30.0
6	30.3	30.1	30.0	29.9	29.9	29.2	28.6	29.1	29.3	29.8	29.8	29.8
7*	30.3	30.1	30.0	29.9	29.8	28.9	27.6	27.6	27.9	28.6	29.9	31.2
8*	30.6	30.4	30.3	28.8	29.5	28.2	26.9	27.4	27.5	28.6	28.9	29.4
9*	30.5	30.4	30.3	30.2	29.8	28.5	26.6	25.7	26.0	28.4	30.2	31.7
10	30.4	30.0	30.0	29.9	29.7	29.2	27.8	27.6	28.6	29.6	30.3	30.5
11*	30.4	30.3	30.3	30.2	30.2	29.2	27.6	28.5	29.8	30.8	31.6	31.8
12	30.4	29.9	29.0	29.3	28.8	28.5	29.1	27.3	29.0	29.3	30.0	31.2
13	28.8	28.5	28.4	29.0	31.7	29.8	26.6	28.1	30.4	31.7	32.7	31.9
14	30.4	29.7	30.5	29.9	29.9	28.5	26.5	26.4	27.3	29.2	31.1	32.3
15	30.7	30.3	30.3	30.0	29.5	28.1	25.9	26.1	28.0	29.4	31.1	31.8
16*	30.7	30.6	30.4	30.3	29.9	28.7	26.8	25.9	26.9	27.9	29.4	31.0
17	30.7	30.6	30.3	30.7	29.7	28.3	26.4	25.5	25.8	27.5	29.5	31.8
18*	30.9	30.8	30.5	30.6	30.5	29.6	27.9	26.2	25.1	27.0	28.7	29.8
19	30.6	30.4	29.8	29.8	30.5	29.1	28.4	27.6	28.1	28.2	28.4	29.4
20	30.3	30.2	30.2	30.4	30.3	30.3	29.0	28.2	28.5	28.2	29.1	29.8
21*	30.6	30.6	30.5	30.5	30.0	29.3	28.2	28.2	28.5	29.8	30.5	31.4
22*	30.6	30.6	30.5	30.5	30.0	29.3	28.2	28.2	28.5	29.8	30.5	31.4
23	30.8	30.3	30.8	30.6	30.4	29.3	28.4	28.5	29.1	30.9	31.4	31.0
24	29.3	29.4	29.2	29.7	29.3	28.6	28.4	28.6	29.4	30.3	30.6	30.8
25	30.6	30.6	30.6	30.3	29.8	29.1	28.7	29.2	30.2	31.5	31.8	31.5
26	30.7	30.3	30.2	29.8	29.6	29.0	28.6	29.3	30.8	31.3	30.5	30.5
27	30.7	30.2	29.9	29.7	29.3	27.8	27.3	27.9	30.4	32.5	32.9	33.1
28	29.7	29.8	31.6	29.3	27.4	26.5	25.5	23.2	25.6	28.0	29.3	31.3
29*	30.9	30.9	30.5	29.9	29.0	27.3	24.2	23.2	24.1	25.9	28.9	31.4
30	31.3	31.7	31.1	30.7	30.2	29.1	27.8	26.6	27.4	29.1	30.4	31.4
31	30.7	30.8	30.8	30.5	30.2	29.7	28.6	28.4	28.6	29.3	30.2	30.5
Mean	30.4	30.3	30.2	30.0	29.8	28.8	27.6	27.3	28.1	29.1	30.1	30.9
Mean*	30.6	30.5	30.3	30.1	29.8	28.8	27.2	26.8	27.2	28.3	29.6	30.8

JUNE, 1904.

1	31.0	30.8	30.7	(30.4)	(30.2)	(29.2)	(27.7)	(27.5)	28.5	30.1	30.5	31.9
2*	31.0	31.0	30.8	30.5	30.2	29.5	27.7	26.8	27.7	28.7	29.8	30.9
3	31.2	30.9	30.7	30.4	30.1	29.5	28.8	28.4	28.8	30.0	30.8	31.5
4	31.0	31.0	30.8	30.3	30.1	28.9	26.7	25.8	25.9	27.6	30.0	31.8
5	30.6	30.6	30.4	30.4	30.3	30.1	29.0	28.8	29.0	29.6	29.6	30.3
6	30.6	30.6	30.6	30.3	30.8	30.6	29.0	29.1	29.4	28.9	29.8	31.0
7	30.9	31.6	31.8	31.6	31.8	30.8	29.8	29.6	30.1	31.3	31.6	31.8
8*	30.9	30.8	30.9	30.7	30.2	29.5	28.6	27.7	28.4	30.1	32.0	32.8
9	31.0	30.8	(31.0)	(30.9)	(30.8)	(30.0)	(28.5)	28.2	30.2	31.6	32.8	33.4
10	31.0	30.8	31.0	30.4	30.1	29.2	27.7	27.7	28.4	29.4	31.2	32.4
11*	31.1	31.1	30.7	30.3	29.9	29.0	27.8	28.5	29.6	31.1	32.5	33.2
12	31.1	30.8	30.8	30.3	30.0	28.8	26.7	26.0	28.4	30.1	31.7	32.9
13*	31.4	31.2	30.9	30.7	30.2	28.7	26.1	25.1	26.7	28.8	30.9	32.6
14*	31.2	31.1	30.8	30.5	29.9	28.7	26.9	26.4	27.6	29.5	30.8	31.4
15	31.1	31.1	30.7	30.3	30.0	28.8	26.9	25.7	26.3	29.0	30.2	31.8
16	29.0	30.5	29.9	31.2	33.9	33.0	31.5	30.0	29.0	28.4	30.7	31.5
17	30.7	30.7	30.9	31.1	30.9	30.2	29.4	28.3	28.4	29.3	30.5	31.2
18	31.9	32.4	31.5	30.9	30.8	29.5	27.9	28.1	29.1	29.9	30.3	30.3
19*	31.4	31.4	31.4	31.2	31.1	29.9	28.7	28.2	28.6	29.2	30.4	31.4
20	31.3	31.4	31.6	31.7	31.1	29.9	28.3	28.9	29.0	29.4	29.6	29.9
21*	31.4	31.1	31.2	31.1	30.8	29.9	28.7	28.3	29.2	30.0	31.3	31.8
22	31.1	31.1	31.0	31.0	30.7	29.4	27.5	27.5	29.4	30.6	31.1	31.6
23*	31.3	31.2	31.1	31.0	30.6	29.3	27.5	28.1	30.5	31.8	32.6	32.6
24*	31.4	31.3	31.1	30.7	30.2	29.0	27.1	27.5	30.6	32.9	34.7	35.6
25	31.6	31.4	31.1	30.6	30.2	28.1	26.3	26.8	28.3	30.4	32.3	32.3
26	31.6	31.4	31.1	30.6	30.4	28.0	26.3	26.9	29.5	31.3	32.2	32.6
27	31.7	31.1	31.1	29.8	28.9	27.6	25.3	28.0	30.4	32.3	34.0	34.6
28	31.4	31.8	31.3	(31.3)	(31.1)	(30.1)	(28.6)	(28.4)	(29.5)	(30.7)	32.0	32.8
29	31.4	31.4	31.4	31.1	30.7	29.6	28.0	28.4	29.4	31.8	33.7	34.7
30*	31.4	31.4	31.4	31.3	31.0	30.1	28.2	27.5	28.7	29.0	31.1	32.4
Mean	31.1	31.1	31.0	30.8	30.6	29.5	27.9	27.7	28.8	30.1	31.4	32.2
Mean*	31.2	31.2	31.0	30.8	30.4	29.4	27.7	27.4	28.8	30.1	31.6	32.5

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

HOURLY VALUES OF DECLINATION.

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1° WEST, PLUS TABULAR MINUTES.

18 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
32.3	32.8	32.4	32.2	31.1	30.7	30.5	30.5	30.5	30.6	30.6	30.5	29.9
32.8	33.2	33.4	32.2	31.3	31.0	30.6	30.7	30.6	30.5	29.9	29.9	30.3
31.8	33.1	32.8	31.9	31.0	30.6	30.6	30.6	30.5	30.1	30.2	30.2	30.0
32.7	34.2	34.5	33.7	32.5	(31.8)	(31.2)	(31.0)	30.4	30.3	30.0	30.0	30.6
31.0	31.8	32.1	31.7	31.0	30.6	30.6	30.6	30.6	30.5	30.3	30.3	30.3
31.0	31.3	31.0	30.5	29.9	30.1	30.3	30.4	30.5	30.4	30.4	30.4	30.1
31.7	31.7	31.5	31.1	30.7	30.1	30.3	30.6	30.6	30.5	30.4	30.5	30.1
30.1	31.2	31.6	31.9	31.7	31.3	31.0	31.0	31.0	30.9	30.9	30.7	30.0
32.8	33.0	33.2	32.2	31.4	30.9	30.8	30.8	30.6	30.6	30.5	30.4	30.2
31.4	31.7	32.2	32.0	31.1	30.9	30.6	30.6	30.8	30.8	30.5	30.4	30.3
32.1	32.1	31.8	31.2	30.6	30.8	30.4	30.5	30.6	30.8	30.6	30.5	30.5
31.4	31.7	32.3	32.3	31.7	31.6	30.5	30.4	30.5	30.2	30.0	29.2	30.2
32.8	33.1	32.7	32.7	31.6	29.5	28.6	29.8	30.4	30.5	29.7	30.3	30.4
33.5	34.9	33.5	31.8	31.1	30.7	30.7	30.7	30.6	30.6	30.4	30.6	30.4
32.7	33.0	32.7	31.8	31.1	31.0	31.1	31.0	31.0	31.0	30.9	30.7	30.4
32.4	33.4	33.6	33.1	31.6	30.7	30.5	30.7	30.7	30.5	30.1	30.3	30.3
33.1	34.8	35.5	34.6	32.7	31.7	31.1	30.7	31.2	31.0	31.0	30.9	30.6
31.7	33.2	33.6	33.2	31.8	31.0	30.6	30.9	30.9	30.6	30.6	30.8	30.3
30.2	30.6	32.2	32.1	31.7	31.4	31.0	31.0	30.9	30.6	30.5	30.5	30.1
30.8	31.5	31.8	31.6	31.0	30.9	30.9	30.9	30.9	30.6	30.6	30.6	30.3
31.7	31.7	31.0	30.5	30.5	30.4	30.5	31.0	31.1	31.0	30.9	30.8	30.3
31.7	31.7	31.0	30.5	30.5	30.4	30.5	31.0	31.1	31.0	30.9	30.8	30.4
31.0	31.4	31.4	31.4	31.4	31.0	30.6	31.0	31.0	30.8	30.5	29.4	30.5
30.8	30.9	30.9	30.5	30.4	30.8	30.6	30.8	30.9	30.8	30.8	30.6	30.1
31.1	30.9	31.0	31.0	30.9	31.0	31.0	31.5	31.5	31.4	31.0	30.8	30.7
30.2	29.7	29.3	29.3	29.7	30.4	30.8	31.3	31.3	31.1	31.0	30.9	30.2
32.2	31.7	30.8	30.1	29.8	29.8	29.5	29.3	29.7	28.6	29.5	29.2	30.1
32.9	34.5	33.7	32.9	32.0	31.5	31.3	30.8	31.6	31.3	31.1	30.8	30.1
32.6	32.8	32.0	31.1	30.9	30.7	30.5	29.9	30.5	31.0	30.9	31.3	29.6
33.1	33.7	33.4	32.6	31.5	31.0	31.0	30.9	30.4	30.3	29.7	30.1	30.6
31.4	31.7	32.0	32.3	32.1	31.7	31.0	31.3	31.0	30.9	31.0	31.0	30.7
31.8	32.3	32.3	31.8	31.2	30.9	30.6	30.7	30.8	30.6	30.5	30.4	30.3
31.7	32.3	32.2	31.7	31.1	30.7	30.6	30.7	30.8	30.7	30.6	30.6	30.2

1° WEST, PLUS TABULAR MINUTES.

32.7	32.8	32.5	32.0	31.0	30.9	31.0	31.1	31.0	30.9	31.0	31.0	30.7
32.6	32.9	32.5	31.7	30.9	30.7	30.9	30.9	30.9	30.9	30.9	31.3	30.5
32.4	33.2	33.6	32.8	32.0	31.2	30.9	31.2	31.2	31.2	31.0	30.9	30.9
32.7	33.4	33.2	32.4	30.9	30.9	31.3	31.3	31.3	31.3	30.8	30.6	30.4
30.4	30.8	31.2	31.3	31.2	31.3	31.3	31.6	31.5	31.3	31.0	31.0	30.5
32.7	33.0	32.5	31.8	31.2	31.2	31.5	31.4	31.3	31.3	31.3	30.8	30.9
32.1	32.5	32.4	31.6	30.9	30.7	31.2	31.3	31.4	31.4	31.3	31.2	31.3
33.3	33.2	32.6	31.9	31.2	31.0	31.2	31.4	31.4	31.2	31.2	31.2	31.0
33.2	33.0	32.4	31.5	30.7	30.7	31.0	31.0	31.3	31.4	31.4	31.2	31.2
32.8	33.2	32.4	31.9	31.6	31.5	31.2	31.6	30.7	31.2	31.3	31.2	30.8
33.6	33.9	33.1	32.3	31.1	30.6	30.7	30.9	31.1	31.1	31.1	31.1	31.1
33.6	34.1	33.5	32.7	31.5	31.2	31.1	30.7	31.1	31.1	31.4	31.3	30.9
33.6	33.5	32.6	31.8	31.4	31.2	31.1	31.4	31.5	31.5	31.5	31.2	30.7
31.5	31.7	32.3	32.1	31.5	30.9	31.1	31.3	31.5	31.4	31.4	31.4	30.5
33.6	33.6	32.6	32.3	32.1	31.5	31.1	30.2	28.8	29.3	28.3	29.1	30.2
31.8	32.4	31.5	31.2	31.1	30.7	31.5	31.7	31.5	30.9	30.9	30.7	31.0
32.0	32.4	33.0	33.6	33.2	32.1	31.5	31.2	31.5	31.5	31.4	31.1	31.1
30.5	31.5	32.0	32.4	32.1	31.9	31.5	31.4	31.4	31.5	31.5	31.5	30.9
32.3	32.6	32.6	32.2	31.6	31.6	31.4	31.3	31.1	30.8	31.0	31.1	30.9
30.4	31.6	32.2	32.2	32.2	32.0	31.8	31.8	31.8	31.4	31.1	30.7	30.9
32.3	32.6	32.6	32.2	31.4	31.3	31.2	31.3	31.2	31.1	31.4	31.4	31.0
32.2	32.3	31.8	31.4	31.2	31.2	31.1	31.3	31.4	31.4	31.3	31.3	30.8
32.6	31.8	31.4	31.1	30.7	31.0	31.3	31.4	31.6	31.8	31.6	31.4	31.1
34.7	33.1	32.3	31.3	30.7	31.1	31.7	31.9	32.0	31.9	31.8	31.6	31.5
32.3	32.0	31.4	30.7	30.2	30.4	30.7	30.8	31.3	31.8	31.8	31.9	30.6
33.0	32.4	32.4	31.8	31.7	32.0	32.8	32.3	31.9	31.4	31.1	31.0	31.1
34.7	34.3	34.3	32.9	31.8	31.4	31.4	31.4	31.7	31.7	30.8	31.3	31.4
32.8	32.3	31.9	31.4	31.1	31.1	31.4	31.3	31.6	31.7	31.8	31.6	31.2
34.9	35.2	34.3	33.4	32.2	31.6	31.3	31.4	31.4	31.4	31.3	31.4	31.7
33.4	33.5	33.8	32.6	31.7	31.3	31.4	31.4	31.4	31.4	31.4	31.4	31.2
32.7	32.8	32.6	32.0	31.4	31.2	31.3	31.3	31.3	31.3	31.2	31.1	30.9
33.0	32.9	32.6	31.9	31.2	31.1	31.2	31.3	31.4	31.3	31.3	31.3	31.0

Interpolated values are in parentheses.

JULY, 1904.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	31.5	31.4	31.4	31.1	30.7	30.0	28.1	26.9	26.1	27.6	29.1	30.3
2.....	31.5	31.5	31.5	31.3	31.1	30.0	28.4	28.5	30.0	30.8	31.4	32.4
3*.....	31.5	31.4	31.2	31.1	30.7	29.6	27.2	26.7	28.1	29.0	30.8	32.0
4*.....	31.7	31.7	31.5	31.3	31.2	29.9	29.1	28.9	29.3	30.2	31.4	31.7
5.....	31.7	31.9	31.9	31.9	31.2	30.0	28.4	28.1	29.3	30.6	31.5	32.9
6.....	31.8	31.8	31.4	31.4	31.3	32.0	31.0	29.6	30.1	30.0	31.0	32.7
7.....	30.9	31.3	30.6	30.2	30.0	29.2	29.0	29.6	31.2	31.6	33.2	34.2
8.....	31.6	31.4	31.4	31.2	30.9	29.8	29.0	28.5	29.2	29.8	30.4	32.0
9.....	31.6	31.4	31.5	31.3	31.3	30.4	28.9	28.9	30.9	31.6	32.5	33.2
10.....	31.6	31.6	32.0	31.2	30.8	29.6	27.7	27.1	29.5	31.2	32.7	34.3
11*.....	31.4	31.2	30.8	30.7	30.1	29.1	27.4	27.6	28.5	30.1	31.4	32.8
12*.....	31.4	31.2	30.9	30.9	30.9	29.5	27.6	27.1	28.5	30.7	32.1	33.1
13.....	31.5	31.3	31.2	30.9	30.6	29.7	28.3	27.3	27.8	29.1	30.4	31.0
14.....	32.1	31.9	31.7	30.9	30.4	29.9	30.5	29.9	31.0	31.3	32.6	33.1
15.....	30.7	31.9	31.4	31.7	31.0	29.5	28.0	28.1	29.1	30.8	32.1	32.5
16.....	32.1	32.1	31.9	31.7	31.4	30.3	30.1	30.1	31.4	31.4	31.7	32.6
17*.....	31.1	31.4	31.7	31.4	30.5	29.6	28.5	27.5	28.4	30.2	32.1	33.2
18.....	31.9	31.1	31.1	31.0	30.7	29.7	28.3	27.8	28.3	28.7	29.8	30.8
19.....	31.1	31.1	31.6	31.3	(30.8)	(29.7)	(28.1)	(27.8)	29.1	29.6	29.8	30.7
20*.....	31.0	31.0	30.7	30.7	30.2	29.6	28.1	27.2	28.1	29.7	30.5	32.0
21*.....	31.4	31.4	31.4	31.0	30.7	29.5	27.2	26.8	28.6	29.8	31.7	32.5
22*.....	31.1	31.1	31.0	30.6	30.5	29.3	28.5	29.0	30.0	30.6	31.5	31.8
23.....	30.9	30.9	30.6	30.6	30.5	30.5	30.5	31.0	31.6	31.5	31.8	32.2
24*.....	31.1	31.1	30.8	30.5	30.3	28.6	26.8	28.0	30.3	32.3	33.8	33.9
25*.....	31.2	31.1	30.8	30.5	30.2	29.0	27.3	27.5	29.1	31.1	33.0	33.5
26.....	30.8	30.6	30.5	30.5	29.7	28.2	26.8	27.2	29.2	30.6	31.2	32.0
27.....	30.2	30.4	29.8	29.8	29.4	28.0	26.3	26.3	27.5	29.7	31.8	32.1
28.....	31.2	31.5	31.0	30.5	30.3	28.7	27.2	26.8	27.9	29.7	30.4	31.7
29.....	31.4	31.4	31.0	31.0	30.5	29.4	27.5	27.8	29.1	28.8	29.0	29.7
30.....	31.7	31.6	31.9	31.5	31.1	30.7	29.9	29.3	30.1	31.0	32.2	31.6
31.....	31.6	31.6	31.5	31.5	31.1	30.3	29.2	29.2	30.4	31.0	31.8	31.7
Mean.....	31.4	31.4	31.2	31.0	30.6	29.7	28.4	28.1	29.3	30.3	31.4	32.3
Mean*.....	31.3	31.3	31.1	30.9	30.5	29.4	27.8	27.6	28.9	30.4	31.8	32.6

AUGUST, 1904.

1.....	31.6	31.6	31.5	31.1	31.0	30.1	28.0	28.1	29.9	31.1	32.2	32.8
2.....	29.9	29.8	29.8	30.1	29.7	29.8	28.5	(28.9)	31.3	32.9	33.3	33.4
3.....	31.0	31.3	31.7	31.3	31.2	29.8	28.7	27.5	28.2	27.9	31.0	32.2
4.....	30.9	30.7	30.7	30.4	31.1	29.5	27.3	28.5	30.1	31.5	32.8	33.0
5*.....	31.5	31.6	31.6	31.6	31.3	29.8	28.7	28.5	29.3	31.0	32.2	32.4
6.....	31.5	31.5	31.5	31.1	30.7	29.8	28.1	29.8	32.9	35.5	36.3	36.1
7*.....	31.6	31.3	31.1	30.8	30.5	29.4	27.8	27.6	28.8	30.0	31.6	33.1
8*.....	31.8	31.7	31.6	31.2	30.8	29.5	27.7	28.1	29.2	30.1	31.1	31.9
9.....	32.0	31.8	31.6	31.4	31.0	29.3	26.8	27.2	30.6	33.4	35.3	35.2
10*.....	31.9	31.7	31.2	30.8	30.2	28.6	26.8	27.4	29.2	30.8	32.0	33.4
11.....	31.9	31.8	31.6	31.1	30.7	29.3	27.8	29.3	31.1	32.9	34.4	34.6
12.....	32.2	32.0	31.7	31.2	30.8	28.9	26.2	26.5	27.5	29.5	32.4	34.2
13.....	31.9	31.8	31.6	31.2	30.8	28.8	26.3	26.6	29.0	32.0	34.3	35.9
14.....	31.7	31.6	31.6	30.8	30.4	28.9	26.5	27.4	29.2	30.4	32.4	33.8
15*.....	32.0	32.0	31.9	31.7	30.8	29.4	26.7	27.0	28.9	31.2	32.5	32.8
16.....	32.1	32.1	31.8	32.1	31.7	30.7	28.1	26.9	26.9	27.3	29.7	31.8
17.....	31.8	31.8	31.7	31.7	31.7	30.7	29.0	28.9	29.4	30.2	30.8	32.1
18.....	31.4	31.3	30.9	30.9	31.3	30.2	29.3	29.5	30.6	31.8	32.0	32.1
19*.....	32.1	32.0	31.8	31.8	31.5	30.7	29.4	29.9	30.9	32.0	32.9	33.3
20.....	32.1	32.1	31.9	31.7	31.2	30.0	27.8	28.5	30.8	32.9	33.7	33.3
21.....	32.1	31.8	31.4	31.1	30.5	29.6	26.7	27.1	28.9	31.8	34.1	34.8
22*.....	31.7	31.5	31.3	31.2	30.9	29.1	27.9	28.7	31.8	33.7	35.3	35.7
23*.....	31.6	31.8	31.8	31.3	30.9	29.5	27.2	27.4	29.7	32.0	33.3	34.2
24.....	31.9	31.8	31.8	31.4	31.2	30.1	28.0	28.0	29.2	30.4	31.3	32.2
25*.....	32.1	32.0	31.8	31.6	31.6	30.9	28.6	28.2	29.5	31.2	33.3	35.0
26.....	32.1	31.9	31.9	31.4	31.2	29.7	26.6	27.0	29.0	31.0	33.0	34.5
27.....	32.0	31.8	31.6	31.4	30.6	29.2	26.4	26.0	28.3	31.0	34.6	36.4
28*.....	32.2	32.1	31.8	31.5	31.3	30.2	28.2	27.4	28.9	30.6	32.5	33.7
29.....	32.2	32.1	32.0	31.8	31.4	30.1	27.8	29.4	30.8	32.1	33.7	35.4
30.....	32.2	32.0	31.4	31.5	31.0	29.5	26.7	26.7	28.3	30.7	32.6	34.5
31.....	33.9	32.6	(32.3)	(32.0)	(31.5)	(30.5)	(29.1)	28.7	31.5	33.2	33.9	35.3
Mean.....	31.8	31.7	31.5	31.3	31.0	29.7	27.7	28.0	29.7	31.4	32.9	33.8
Mean*.....	31.8	31.8	31.6	31.4	31.0	29.7	27.9	28.0	29.6	31.3	32.7	33.6

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

1° WEST, PLUS TABULAR MINUTES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
32.1	33.2	32.7	32.3	31.7	31.9	31.7	31.9	31.8	31.5	31.8	31.7	30.8
33.0	33.5	33.1	32.1	31.5	31.7	32.0	32.3	32.1	31.9	31.5	31.5	31.4
32.7	32.9	32.4	31.9	31.5	31.5	31.7	32.0	32.1	32.0	32.0	31.8	31.0
31.7	32.1	32.6	33.1	32.9	32.5	32.5	32.4	32.1	32.0	31.2	31.7	31.4
33.9	34.4	33.3	32.4	31.9	31.9	32.4	32.4	32.1	31.8	31.7	31.7	31.6
33.3	33.8	33.2	33.9	34.4	33.1	31.4	31.4	30.1	30.9	30.9	30.2	31.7
34.3	33.4	32.6	32.1	32.0	31.4	32.0	32.5	32.1	30.9	31.4	31.6	31.6
32.8	33.3	33.4	33.0	32.6	32.4	32.1	32.0	32.0	31.9	31.6	31.9	31.4
34.0	33.6	33.7	33.7	32.7	32.8	32.5	32.1	31.6	32.1	31.9	32.7	32.0
34.4	33.7	33.0	31.3	30.8	31.3	31.5	31.5	31.4	31.5	31.6	31.5	31.4
33.9	33.6	32.8	32.0	31.4	31.4	31.6	31.6	31.6	31.6	31.6	31.5	31.1
34.2	33.7	33.2	32.8	31.8	31.6	31.6	31.6	31.6	31.3	31.6	31.6	31.3
31.3	32.5	33.3	32.4	31.3	31.3	31.5	31.6	31.6	31.8	31.9	31.9	30.9
33.5	33.3	31.9	30.9	30.9	30.7	31.0	30.5	31.4	31.3	31.1	31.1	31.4
32.7	33.2	33.7	33.2	32.3	31.4	31.3	31.0	30.7	30.9	31.3	31.6	31.3
31.7	32.1	32.6	32.5	31.7	31.7	31.9	31.4	31.3	30.5	30.7	30.9	31.5
32.9	32.7	32.6	32.3	31.7	31.0	30.9	31.0	31.0	30.8	30.7	31.1	31.0
31.7	32.5	32.6	32.1	31.1	30.8	31.3	31.3	31.3	31.1	30.9	30.9	30.7
31.1	31.4	31.7	31.7	31.4	31.4	31.4	31.4	31.3	31.3	30.9	31.0	30.7
32.2	32.6	32.9	32.9	32.6	31.7	31.7	31.7	31.6	31.1	31.4	31.4	30.9
31.7	31.4	30.9	30.5	30.8	31.4	31.9	31.9	31.7	31.3	31.0	31.0	30.7
31.1	31.1	31.0	31.1	31.5	31.8	31.8	31.8	31.5	31.5	31.2	31.0	30.9
31.2	31.0	31.5	31.8	32.2	31.8	31.8	31.7	31.5	31.4	31.2	31.5	31.3
33.8	33.5	33.0	31.8	31.4	31.5	31.8	31.8	31.8	31.5	31.5	31.1	31.3
33.9	33.9	33.6	32.7	31.4	31.0	31.5	31.8	31.4	31.0	31.0	30.9	31.2
32.6	33.0	33.3	33.3	33.0	32.9	31.8	31.5	32.2	31.4	31.4	30.9	31.0
31.6	31.4	30.5	30.6	30.6	30.8	31.4	31.4	31.6	31.5	31.5	31.0	30.2
31.8	32.0	31.8	31.5	31.4	31.5	31.4	31.5	31.5	31.0	31.4	31.5	30.6
30.3	31.0	31.6	32.0	31.4	31.4	31.8	31.8	31.8	31.7	31.6	31.7	30.6
31.1	32.3	32.9	33.0	31.9	31.8	31.6	31.0	30.9	31.0	31.1	31.1	31.3
31.5	31.7	32.9	32.3	31.8	31.3	31.5	31.1	31.5	31.6	31.6	31.5	31.3
32.5	32.7	32.6	32.2	31.8	31.6	31.7	31.6	31.6	31.4	31.4	31.4	31.1
32.8	32.8	32.5	32.1	31.7	31.5	31.7	31.8	31.6	31.4	31.3	31.3	31.1

1° WEST, PLUS TABULAR MINUTES.

33.0	33.3	33.4	33.0	32.5	31.9	31.9	31.8	31.8	31.8	31.5	30.4	31.5
33.1	32.7	31.5	31.1	31.5	31.2	31.5	31.5	31.5	31.3	31.1	30.7	31.1
32.8	33.1	33.1	32.5	31.8	31.6	32.8	31.7	31.0	31.1	31.0	31.1	31.1
33.0	33.9	33.9	33.4	33.0	31.9	31.8	31.8	31.6	30.3	31.3	31.5	31.4
32.2	32.7	32.3	31.9	31.6	31.6	31.9	31.8	31.8	31.6	31.6	31.5	31.3
34.7	34.3	33.9	33.1	32.3	31.8	31.8	31.9	31.9	31.8	31.6	31.6	32.3
34.2	34.0	33.2	32.4	31.6	31.6	31.7	31.8	31.9	31.9	31.9	31.9	31.3
32.8	34.3	34.0	32.9	31.9	31.7	31.7	31.9	31.9	32.0	32.0	32.0	31.4
34.4	32.8	32.0	32.0	31.9	32.0	32.0	32.2	31.6	31.6	31.7	31.9	31.7
33.2	33.1	32.6	32.0	31.6	31.4	31.7	31.9	31.9	31.9	32.0	32.0	31.2
34.3	33.6	32.2	30.8	30.5	31.2	31.9	32.0	32.2	32.2	32.0	32.2	31.7
34.3	33.6	32.4	31.6	30.8	31.0	31.6	31.8	31.9	31.9	31.9	32.0	31.2
35.8	34.8	33.0	31.2	30.5	30.7	31.3	31.6	31.7	31.7	31.7	31.8	31.5
34.1	34.3	33.6	32.4	31.9	31.6	32.0	32.2	32.0	32.0	31.9	31.9	31.4
33.8	33.9	34.1	33.3	32.8	31.9	31.8	31.7	31.2	31.7	32.0	32.1	31.6
32.9	33.7	34.1	33.7	33.3	33.0	32.5	32.4	32.1	31.7	31.7	31.8	31.4
33.0	33.6	34.1	33.8	33.3	32.5	32.6	32.5	32.4	32.3	31.9	30.9	31.8
32.3	32.0	32.0	32.6	32.9	32.6	32.5	32.0	32.1	32.4	32.1	32.1	31.6
33.6	33.3	33.2	32.7	32.0	31.9	32.1	32.4	32.4	32.4	32.3	32.3	32.0
32.4	32.3	32.5	32.5	32.5	32.5	32.6	33.0	32.9	32.6	32.5	33.2	31.9
35.5	35.6	34.5	33.5	32.0	31.2	32.4	32.3	32.0	31.7	32.1	31.7	31.8
35.3	34.9	34.2	33.6	32.5	32.3	32.1	32.4	32.1	32.0	32.0	31.8	32.2
35.1	35.2	34.9	34.4	33.4	32.6	32.5	32.6	32.7	32.6	32.2	32.1	32.1
32.8	33.2	33.1	32.7	32.1	32.1	32.6	32.6	32.8	32.6	32.5	32.2	31.6
36.2	35.5	33.9	32.2	31.5	32.0	32.4	32.5	32.5	32.4	32.2	32.2	32.1
35.6	35.5	33.8	32.7	32.2	32.0	32.0	32.1	32.1	32.1	32.1	32.1	31.8
37.0	36.3	35.2	34.3	33.3	32.8	32.6	32.6	32.5	32.5	32.5	32.4	32.2
34.2	34.0	33.7	33.4	32.8	32.6	32.5	32.4	32.5	32.5	32.4	32.2	31.9
35.2	34.2	33.3	32.4	31.9	31.9	32.1	31.8	31.9	32.2	32.1	31.8	32.1
35.0	34.3	33.4	33.0	32.5	32.5	32.5	32.1	32.0	30.2	31.8	31.8	31.6
35.5	34.7	34.1	33.1	32.7	32.6	32.7	33.1	32.9	32.8	32.8	32.7	32.7
34.1	34.0	33.4	32.7	32.2	31.9	32.1	32.1	32.1	31.9	31.9	31.8	31.7
34.1	34.1	33.6	32.9	32.2	32.0	32.0	32.1	32.1	32.1	32.1	32.0	31.7

Interpolated values are in parentheses.

SEPTEMBER, 1904.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	32.3	32.5	33.1	32.7	32.1	30.3	28.7	29.1	29.6	30.5	31.7	33.2
2*.....	32.3	32.5	32.3	32.2	31.9	30.7	28.5	29.6	30.3	31.0	32.1	33.1
3*.....	32.3	32.5	32.2	32.1	32.0	30.8	29.8	29.9	30.7	31.4	32.3	33.1
4.....	32.2	32.0	31.5	31.5	31.1	30.3	29.9	30.2	30.2	32.2	33.2	33.5
5.....	....	....	....	....	....	....	....	....	....	....	....	....
6.....	....	....	....	....	....	....	....	....	....	....	....	....
7.....	....	....	....	....	....	....	....	....	....	....	....	....
8.....	....	....	....	....	....	....	....	....	....	....	....	....
9.....	....	....	....	....	....	....	....	....	....	....	....	....
10.....	35.5	35.3	36.1	34.4	34.2	32.9	30.9	31.4	32.7	34.1	36.0	37.2
11.....	33.8	33.7	33.6	32.5	31.7	31.2	29.3	28.7	30.8	33.2	35.1	36.8
12*.....	33.0	33.1	33.1	32.8	32.6	31.3	29.8	28.3	28.7	29.6	31.7	33.8
13.....	33.4	33.1	33.0	33.0	32.8	31.1	29.2	29.6	30.2	32.3	33.8	35.0
14*.....	33.0	33.0	32.8	32.5	32.2	31.0	29.2	28.7	28.7	29.5	31.5	33.0
15.....	33.0	33.0	32.9	32.5	32.2	31.2	30.5	30.6	32.1	32.4	33.5	34.1
16.....	32.7	32.9	33.7	30.7	31.6	30.6	29.2	29.4	31.0	32.5	33.6	34.3
17*.....	32.7	32.6	32.3	32.2	32.0	31.1	29.6	30.0	31.5	33.2	34.1	34.7
18*.....	32.9	32.7	32.4	32.1	31.6	30.5	28.8	29.0	29.8	31.0	32.6	33.6
19*.....	32.5	32.5	32.3	32.2	31.6	30.8	29.7	30.2	31.6	33.2	33.7	34.3
20.....	32.5	32.5	32.2	32.1	31.9	30.9	29.9	30.1	31.3	32.8	34.5	35.2
21.....	32.8	32.5	32.5	32.3	31.9	31.0	29.3	29.6	30.4	31.6	32.1	32.6
22*.....	32.7	32.4	32.2	31.9	31.4	30.1	29.0	29.7	31.8	33.6	34.6	35.1
23.....	32.2	32.0	31.0	30.4	30.2	29.1	28.6	29.6	32.1	33.7	36.0	36.8
24.....	32.6	32.5	32.1	31.9	31.4	30.5	29.0	29.4	30.6	31.9	33.2	34.1
25.....	31.3	30.7	30.5	31.4	31.4	32.1	31.4	30.0	31.4	31.1	32.1	33.3
26.....	31.4	31.9	32.3	32.6	32.3	31.9	31.1	30.5	30.1	31.1	32.5	33.7
27*.....	32.9	32.9	32.9	32.5	32.0	30.8	28.8	27.6	28.1	29.9	32.5	33.8
28.....	32.9	32.5	32.5	32.2	31.8	31.3	29.8	28.3	28.3	29.4	30.6	31.7
29*.....	33.1	32.9	32.8	32.8	32.4	32.1	31.8	31.8	32.1	32.9	33.6	34.1
30.....	32.5	32.4	32.4	32.4	31.9	31.2	30.3	29.7	29.7	31.2	32.7	33.6
Mean.....	32.8	32.7	32.6	32.3	32.0	31.0	29.7	29.6	30.6	31.8	33.2	34.2
Mean*.....	32.7	32.7	32.5	32.3	32.0	30.9	29.5	29.5	30.3	31.5	32.9	33.9

OCTOBER, 1904.

1*.....	33.0	32.9	32.9	32.7	32.3	31.9	31.1	30.1	30.0	30.7	31.8	32.4
2.....	32.7	32.4	32.6	31.8	32.1	32.0	30.8	30.0	29.6	30.6	30.8	31.1
3*.....	32.7	32.6	32.4	32.4	32.3	31.8	31.0	30.8	30.9	31.5	32.2	32.7
4.....	32.8	32.6	32.5	32.6	32.5	32.5	32.0	31.9	31.7	31.7	31.6	31.6
5.....	33.2	32.7	32.3	32.5	32.6	31.9	30.5	30.3	30.7	31.6	32.7	32.9
6.....	32.5	32.7	32.2	32.7	31.9	32.0	31.6	31.3	31.3	32.0	32.7	32.9
7.....	31.4	32.1	32.5	34.2	32.0	31.6	31.4	30.9	33.1	33.7	33.2	33.7
8.....	32.5	34.0	33.3	32.5	32.2	32.1	30.9	30.2	31.5	32.7	34.0	34.6
9.....	33.2	33.2	32.5	32.4	32.1	31.9	30.9	30.3	30.6	32.5	33.8	34.4
10.....	34.1	33.2	32.7	32.3	32.4	31.5	30.1	29.3	29.4	31.1	32.4	33.8
11*.....	33.0	32.9	32.9	32.6	32.4	32.0	30.6	28.8	28.1	28.8	31.1	32.7
12.....	33.1	33.2	33.2	33.1	32.5	32.3	30.6	28.2	27.1	28.0	30.4	32.9
13.....	32.8	33.0	32.8	32.8	32.4	32.4	32.0	31.3	30.2	29.6	30.0	31.1
14.....	31.9	32.1	32.2	32.3	32.1	32.2	31.9	31.0	30.4	30.0	31.2	31.2
15*.....	32.3	32.3	32.5	32.3	32.3	32.3	31.5	30.6	29.8	29.4	29.9	31.1
16.....	32.3	32.3	32.8	32.8	32.8	32.3	31.7	31.3	30.6	30.9	31.0	31.1
17*.....	32.9	32.9	32.8	32.9	32.9	33.2	32.8	32.1	31.7	31.8	33.0	34.0
18*.....	33.0	33.0	33.3	32.9	32.6	32.2	31.2	30.3	30.2	30.2	30.8	32.1
19*.....	32.6	32.7	33.2	32.5	32.3	32.0	31.5	30.7	30.2	30.2	30.8	31.3
20.....	32.9	32.9	32.9	32.9	32.6	32.1	31.3	30.9	31.4	31.7	32.8	33.3
21.....	33.7	34.6	33.7	33.2	32.9	32.1	30.9	29.5	28.9	29.2	31.6	32.1
22.....	32.8	32.4	33.4	33.2	32.6	(32.8)	(32.4)	(31.9)	32.4	32.7	33.3	33.4
23*.....	33.1	33.4	33.2	33.0	32.5	31.9	30.9	30.6	31.2	32.5	33.9	34.4
24*.....	33.2	33.2	33.1	32.9	32.6	32.4	31.5	31.2	31.7	33.0	34.2	35.0
25.....	33.5	33.3	33.3	33.1	32.6	32.7	32.3	31.5	31.3	32.6	34.1	34.3
26.....	33.1	33.3	33.2	33.0	32.7	32.3	31.1	30.3	30.5	31.9	33.0	33.5
27.....	33.6	33.8	33.7	33.0	32.8	32.4	31.6	31.1	31.2	(32.0)	(33.1)	(34.0)
28.....	33.7	33.2	34.6	33.4	33.7	34.0	33.4	32.5	32.5	(33.0)	(33.8)	(34.3)
29*.....	33.4	33.4	33.4	33.3	33.1	33.0	32.2	31.8	32.2	32.5	33.6	33.9
30.....	33.6	34.2	34.0	33.4	32.9	32.9	33.4	33.1	33.5	33.5	33.6	33.7
31.....	33.3	33.6	33.6	34.0	33.6	34.2	34.1	33.3	32.8	32.8	32.4	32.3
Mean.....	33.0	33.0	33.0	32.9	32.6	32.4	31.6	30.9	30.9	31.4	32.4	33.0
Mean*.....	32.9	32.9	33.0	32.8	32.5	32.3	31.4	30.7	30.6	31.1	32.2	33.0

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

1° WEST, PLUS TABULAR MINUTES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
33.9	34.4	34.3	33.5	32.7	32.5	32.7	32.7	32.5	32.3	32.6	32.9	32.2
33.5	34.3	34.3	34.1	33.4	32.8	32.6	32.6	32.6	32.6	32.5	32.3	32.3
33.1	33.1	32.9	32.8	32.7	32.8	32.7	32.8	32.9	32.8	32.6	32.6	32.2
33.7	33.9	33.7	34.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....
.....
.....
.....
37.5	36.3	35.1	34.4	34.2	33.9	34.1	33.9	34.1	34.1	34.1	34.1	34.4
38.0	37.5	36.6	35.7	34.3	32.9	32.5	32.7	31.5	32.3	33.2	33.1	33.4
35.9	36.2	35.5	34.8	34.0	33.5	33.0	32.8	32.8	32.5	32.8	32.9	32.7
36.5	36.4	35.2	34.0	33.1	32.6	33.0	33.0	33.0	33.0	33.0	33.1	33.0
34.8	35.7	35.4	34.9	34.2	33.3	33.0	33.0	33.0	32.9	33.0	33.0	32.6
34.6	34.6	34.1	33.7	33.7	33.6	33.0	33.0	33.0	32.9	33.0	33.0	32.9
34.6	34.1	33.9	33.7	33.4	33.4	33.6	33.3	33.0	33.0	33.0	32.8	32.7
34.8	34.7	34.2	33.9	33.5	33.3	32.9	32.9	32.8	32.8	32.7	32.7	32.8
34.1	34.1	33.3	32.7	32.7	33.3	33.3	33.4	33.3	33.2	32.9	32.7	32.3
35.1	35.3	34.4	33.5	32.9	32.9	32.9	32.8	32.8	32.6	32.7	32.6	32.7
35.6	35.5	34.4	34.0	33.7	33.5	33.2	33.2	33.2	32.8	32.8	32.8	32.9
33.5	33.3	33.5	33.7	33.7	33.8	33.5	33.3	33.2	33.1	33.1	32.9	32.5
34.8	33.9	33.4	33.1	33.2	33.2	33.3	33.4	33.1	33.1	32.8	32.6	32.7
36.6	34.6	33.2	32.4	32.6	33.2	33.2	33.1	33.0	32.7	33.0	33.0	32.6
34.5	34.4	34.3	34.3	34.2	34.1	33.6	32.6	31.8	31.4	30.7	32.0	32.4
33.8	33.7	33.8	33.3	33.0	32.6	32.3	32.5	32.5	32.6	32.3	31.9	32.1
35.0	35.7	35.4	34.2	33.2	32.6	32.6	32.6	32.6	32.7	33.0	33.0	32.7
35.0	35.5	35.3	35.0	34.4	33.4	33.0	32.9	32.9	32.9	32.9	32.6	32.5
32.2	32.5	32.9	33.2	33.7	33.6	33.1	32.9	32.9	32.9	33.0	33.2	32.0
34.6	34.5	34.2	34.1	33.9	33.5	33.1	32.9	32.8	32.8	32.9	32.8	33.1
33.6	33.6	33.5	33.4	33.5	33.5	33.3	33.1	33.0	32.9	32.8	32.9	32.5
34.8	34.7	34.3	33.8	33.5	33.2	33.1	33.0	32.8	32.8	32.8	32.8	32.7
34.6	34.7	34.3	33.9	33.5	33.2	33.0	33.0	32.9	32.8	32.8	32.7	32.6

1° WEST, PLUS TABULAR MINUTES.

32.9	34.0	34.6	34.1	33.9	33.5	33.1	32.9	32.8	32.8	32.8	32.9	32.6
32.3	32.8	33.2	33.5	34.0	33.9	33.3	33.0	32.8	32.8	32.7	32.7	32.2
33.2	33.2	33.5	33.8	33.9	33.5	33.2	33.2	33.0	32.9	32.8	32.9	32.6
31.7	32.6	33.1	33.7	33.8	32.9	32.7	32.7	32.9	32.9	32.7	32.6	32.5
33.1	33.1	32.7	32.9	33.8	33.7	33.4	33.3	33.2	33.1	32.6	32.2	32.5
32.7	32.7	32.5	33.1	33.3	33.4	33.3	33.3	33.2	33.2	32.3	31.1	32.5
34.0	33.7	33.2	33.0	33.3	32.5	32.4	30.9	31.8	32.4	33.7	32.7	32.6
34.8	33.8	32.2	32.6	33.0	32.8	32.5	32.2	32.4	33.1	33.1	33.2	32.8
35.0	35.1	34.4	33.6	32.9	32.9	32.9	32.9	32.9	32.7	33.0	33.2	32.9
34.3	34.3	33.7	33.3	33.0	33.0	33.0	32.9	32.9	32.7	32.9	32.9	32.6
34.2	35.3	35.1	34.4	33.5	33.1	32.7	32.7	32.9	33.1	33.2	33.2	32.5
34.8	35.9	36.4	35.9	34.6	33.5	33.1	32.9	32.9	33.0	32.8	32.8	32.6
32.8	34.7	35.2	35.5	34.4	33.6	34.0	33.5	32.4	31.7	30.8	31.4	32.5
32.3	34.0	35.1	35.2	34.8	33.9	33.5	32.7	33.1	32.8	32.4	32.3	32.5
31.9	33.1	34.1	35.1	35.2	34.3	33.5	33.3	33.1	32.1	32.4	32.3	32.4
32.1	33.9	34.5	35.1	35.1	34.0	33.5	33.5	33.1	33.0	33.0	33.1	32.7
35.1	35.8	36.2	35.3	34.2	33.3	33.2	33.2	33.0	33.0	33.0	33.0	33.4
32.7	33.8	35.0	35.0	34.6	33.4	33.0	32.9	32.8	32.8	32.8	32.8	32.6
31.4	32.5	34.1	34.5	34.0	33.2	33.1	32.9	32.8	32.8	32.9	32.9	32.4
33.3	33.8	34.9	34.9	34.1	33.2	33.2	32.7	32.6	32.9	32.9	33.3	32.9
32.6	33.3	34.0	34.0	(33.2)	(32.5)	(31.9)	(31.4)	30.4	31.3	32.1	32.7	32.2
34.0	33.8	33.3	32.4	32.7	33.1	33.1	33.0	32.7	32.1	33.2	33.2	32.9
34.4	34.4	33.9	33.4	33.3	33.4	33.2	33.1	33.1	33.1	33.2	33.3	33.0
35.6	35.4	34.7	33.8	33.6	33.1	33.1	33.0	33.0	33.1	33.3	33.5	33.3
34.3	34.8	35.0	35.3	34.7	34.7	34.1	33.5	33.1	33.0	33.1	33.3	33.5
33.8	34.7	35.0	35.0	34.5	33.7	33.3	33.1	33.0	33.1	33.2	33.6	33.1
(34.7)	35.6	35.3	34.8	34.4	33.6	33.5	32.5	32.5	32.5	32.9	33.2	33.2
(34.7)	(35.0)	(35.2)	(34.9)	34.4	34.0	33.6	33.2	33.2	33.2	33.2	33.4	33.8
34.0	34.5	35.4	35.5	34.8	33.7	33.5	33.1	33.1	33.1	33.4	33.5	33.5
(34.5)	(34.8)	(34.9)	(34.8)	34.6	33.6	33.1	32.9	32.8	32.9	33.1	33.0	33.6
32.4	33.0	33.5	33.9	34.2	33.3	33.6	33.6	33.3	33.3	33.5	33.6	33.4
33.5	34.1	34.3	34.3	34.0	33.4	33.2	32.9	32.8	32.8	32.9	32.9	32.8
33.5	34.2	34.7	34.5	34.1	33.4	33.2	33.0	33.0	32.9	33.0	33.0	32.8

Interpolated values are in parentheses.

NOVEMBER, 1904.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1*	34.0	33.9	34.0	33.6	33.6	33.6	33.0	32.1	31.8	32.1	32.5	33.1
2	33.6	33.6	33.6	33.5	33.5	33.2	33.2	32.3	32.3	32.8	32.9	33.6
3	33.8	33.9	33.9	33.8	34.1	33.9	33.9	33.5	32.7	33.2	33.6	34.0
4	34.4	34.4	34.4	34.8	34.1	34.4	35.1	34.4	34.1	34.5	34.7	35.1
5	33.9	33.7	34.7	33.4	33.1	33.1	33.7	33.5	33.4	33.8	34.6	34.3
6	35.0	34.4	33.9	34.3	33.4	32.9	32.5	32.6	31.7	31.9	32.3	32.9
7*	34.5	34.4	34.3	33.5	33.4	33.4	33.2	32.3	31.5	31.5	32.5	32.7
8	34.5	34.4	34.4	34.3	33.7	33.3	32.5	31.4	30.7	31.3	32.8	34.2
9*	34.4	34.4	34.4	33.9	33.7	33.6	32.5	31.5	31.9	33.0	34.2	34.9
10	34.5	34.4	34.5	34.3	33.8	33.8	33.4	32.5	31.6	32.2	33.4	34.4
11*	33.9	34.1	34.1	33.9	33.7	33.6	33.5	32.3	31.1	31.3	32.0	32.6
12*	34.1	34.2	34.2	34.2	34.1	33.9	(33.2)	(32.0)	30.8	31.2	32.4	33.5
13*	34.1	34.1	34.3	34.1	34.1	33.7	33.8	32.9	32.1	32.0	33.0	33.6
14*	33.8	34.0	33.8	33.8	33.6	33.6	33.5	32.6	31.4	31.6	33.1	34.0
15	34.1	34.2	34.3	34.2	34.1	34.0	33.7	32.5	31.9	31.6	32.3	33.1
16	32.2	34.0	32.4	32.2	32.8	33.6	33.6	32.6	31.8	31.8	31.9	32.5
17	33.9	34.7	36.1	35.3	34.5	34.2	34.7	32.5	31.3	30.7	31.3	32.2
18	34.6	34.8	35.4	36.1	35.8	35.8	34.7	33.4	32.5	32.2	32.3	33.9
19	34.7	34.8	34.7	34.7	34.1	34.1	33.9	33.4	32.9	33.3	34.6	35.3
20	33.6	33.6	33.6	33.3	33.3	33.2	32.9	32.3	31.6	32.8	33.6	34.7
21	(34.2)	(34.4)	(34.4)	(34.1)	(33.8)	(33.5)	(33.3)	(32.3)	31.0	32.4	34.6	35.7
22	34.2	34.5	34.4	34.1	33.5	33.2	32.8	31.8	32.1	32.8	34.8	35.4
23	34.7	34.7	34.5	34.3	34.0	33.9	33.2	32.1	31.5	31.6	32.8	33.8
24*	33.9	33.9	33.9	33.7	33.4	33.7	33.1	32.6	31.7	32.3	33.1	34.9
25	(34.5)	(34.7)	(34.9)	(34.9)	(34.7)	(34.7)	(34.6)	33.9	33.5	34.4	34.1	34.0
26	34.4	34.2	34.3	34.0	34.2	34.0	34.3	33.2	32.0	31.2	31.9	34.5
27*	34.4	34.6	34.9	34.5	34.2	33.9	34.2	33.2	32.2	32.6	33.1	33.4
28	(34.2)	(34.3)	(34.4)	(34.3)	(34.0)	(33.9)	(33.7)	33.1	31.9	31.0	31.4	34.3
29*	33.9	34.1	34.1	34.1	33.8	33.7	33.7	33.2	31.8	30.7	30.3	32.0
30	34.4	34.5	34.5	34.4	34.2	34.3	34.2	33.1	31.8	31.7	32.3	33.3
Mean	34.1	34.3	34.3	34.1	33.9	33.8	33.6	32.7	32.0	32.2	32.9	33.9
Mean*	34.1	34.2	34.2	33.9	33.8	33.7	33.4	32.5	31.6	31.8	32.6	33.5

DECEMBER, 1904.

1	34.1	34.5	34.5	34.4	34.2	34.4	34.9	34.1	32.1	31.5	31.4	32.4
2	(34.4)	(34.6)	(34.6)	(34.4)	(34.2)	(34.2)	(34.3)	(33.2)	(32.2)	(32.2)	(32.9)	(34.1)
3	34.9	34.8	34.7	34.3	34.7	34.3	33.7	33.6	32.6	32.4	33.1	33.6
4	35.0	35.0	34.7	34.3	34.1	34.1	34.2	33.6	32.3	32.4	32.8	33.6
5	34.8	34.7	34.8	35.2	34.6	34.8	35.2	34.0	(32.8)	(32.5)	(33.0)	34.1
6*	34.8	34.8	34.7	34.3	34.0	34.0	34.0	33.3	31.8	32.3	33.6	35.1
7*	34.7	34.8	34.7	34.5	34.1	34.0	33.6	32.3	31.3	31.3	32.1	33.7
8	35.1	35.1	35.1	34.7	34.2	34.1	34.4	33.4	32.7	32.3	33.2	34.8
9	34.6	34.7	34.7	34.5	34.4	33.9	33.4	32.2	31.6	33.4	34.1	35.6
10	34.7	34.5	34.5	34.1	33.9	33.5	33.0	32.7	31.7	33.0	34.6	35.9
11	34.5	34.6	34.5	34.3	34.3	34.3	33.8	32.6	32.1	32.6	34.7	36.8
12*	34.4	34.4	34.6	34.5	34.3	33.9	33.9	32.7	31.6	31.3	31.5	33.4
13*	34.6	34.6	34.7	34.6	34.6	34.5	34.3	33.4	32.3	32.7	33.1	33.4
14	34.9	34.8	35.1	34.9	34.6	34.5	34.5	33.4	(32.5)	(32.4)	(33.1)	(34.3)
15	35.2	34.8	34.2	34.5	34.3	34.9	34.6	33.3	32.0	31.8	32.0	32.0
16	34.5	35.1	35.1	34.9	35.5	35.5	35.6	34.5	32.8	32.5	32.6	33.7
17*	34.5	34.7	34.8	34.5	34.7	34.7	34.3	33.0	31.8	30.7	31.1	31.9
18	34.7	34.5	34.5	34.5	34.4	34.5	34.5	33.2	32.0	31.5	31.5	33.8
19*	34.7	34.8	34.8	34.7	34.5	34.5	34.5	33.6	32.7	32.4	33.1	34.7
20	34.4	34.4	34.3	34.3	34.7	34.4	34.2	32.2	31.3	31.6	32.0	33.5
21	34.9	34.8	35.2	34.4	34.0	33.8	34.0	33.4	33.6	34.0	35.5	36.0
22*	34.7	34.7	34.7	34.7	34.4	34.3	34.3	33.4	32.3	32.3	33.2	34.0
23	34.9	34.9	34.7	34.7	34.6	34.3	34.6	34.0	33.3	33.5	34.2	34.9
24*	35.1	35.1	35.3	35.1	34.8	34.6	34.5	33.4	31.9	31.6	31.9	32.9
25	35.2	35.4	35.1	35.1	34.9	34.7	35.1	33.9	31.9	31.8	32.3	33.4
26	34.6	34.7	34.7	34.7	34.6	34.1	34.6	34.2	34.1	34.0	34.6	35.7
27	35.0	35.3	35.7	35.0	35.0	34.7	35.0	33.8	32.6	31.7	32.0	33.0
28*	34.6	35.0	35.0	35.0	35.0	34.8	35.0	33.8	32.7	32.8	33.5	35.4
29	35.0	35.2	35.5	35.6	35.3	34.7	34.9	33.5	31.7	30.5	31.0	32.8
30	34.6	35.2	35.2	34.9	35.1	34.5	34.7	33.9	32.7	32.8	33.7	35.2
31*	34.7	34.9	35.2	35.0	34.9	34.6	34.9	34.0	32.8	32.8	33.3	33.7
Mean	34.7	34.8	34.8	34.7	34.5	34.4	34.4	33.4	32.3	32.3	32.9	34.1
Mean*	34.7	34.8	34.8	34.7	34.5	34.4	34.3	33.3	32.1	32.0	32.6	33.8

*The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

HOURLY VALUES OF DECLINATION.

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1° WEST, PLUS TABULAR MINUTES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
33.9	34.5	35.1	35.2	34.8	34.0	33.7	33.6	33.6	33.6	33.6	33.6	33.6
33.8	33.5	34.2	34.7	34.8	34.0	34.2	33.6	33.2	33.6	33.3	33.5	33.5
34.4	34.2	34.4	34.4	34.6	34.2	34.4	34.2	34.0	34.0	34.0	34.0	34.0
35.0	34.4	34.7	34.5	34.5	33.9	34.0	32.9	33.6	33.5	33.9	33.9	34.3
34.6	34.7	34.9	35.1	34.7	34.3	33.9	33.9	33.5	34.1	34.6	34.4	34.1
33.1	33.4	33.5	33.8	34.6	34.6	34.3	34.0	34.0	34.3	34.3	34.4	33.6
33.2	33.5	33.8	34.0	34.3	34.3	34.1	34.0	33.9	34.1	34.4	34.6	33.6
34.6	35.0	34.6	34.5	34.4	34.0	33.7	33.6	33.3	33.7	34.0	34.2	33.6
35.2	35.7	35.4	35.0	34.8	34.0	33.8	33.8	33.7	33.8	34.0	34.2	34.0
35.2	35.6	35.8	35.4	34.5	34.0	33.8	33.7	33.6	33.7	33.8	33.9	34.0
33.1	33.9	34.9	35.1	35.3	34.3	33.8	33.6	33.5	33.6	33.7	33.9	33.5
34.4	35.3	35.7	35.5	35.0	34.3	34.1	33.8	33.6	33.6	33.8	33.9	33.8
33.7	33.6	33.8	34.3	34.7	34.1	33.9	33.7	33.7	33.7	33.9	33.7	33.7
34.0	34.2	34.7	34.7	34.3	34.6	34.2	34.1	34.0	34.0	34.0	34.1	33.7
33.8	34.2	34.7	35.2	34.9	34.1	33.7	33.4	33.2	33.2	34.3	32.2	33.6
33.0	33.7	34.6	35.4	35.3	34.7	31.9	34.1	34.1	34.1	33.5	34.7	33.4
33.0	33.0	34.1	34.6	34.9	34.7	34.3	34.1	33.9	34.0	33.4	34.7	33.8
34.5	34.6	34.6	35.1	35.2	34.7	34.5	34.2	34.1	34.3	34.6	34.7	34.4
36.4	36.4	35.8	35.1	34.6	33.1	33.4	33.4	33.4	33.5	33.5	33.7	34.3
35.1	35.2	35.1	35.0	34.6	34.1	34.1	34.1	34.1	(34.1)	(34.1)	(34.2)	33.8
35.9	35.3	35.1	35.0	34.5	34.4	34.1	34.0	34.1	34.0	34.4	34.6	34.1
35.7	35.9	35.7	35.0	34.5	34.2	34.0	34.0	33.6	34.1	34.5	34.7	34.1
34.4	34.6	34.5	34.3	33.9	33.9	33.5	33.2	33.4	33.5	33.5	33.8	33.6
35.3	35.3	35.0	34.4	34.0	34.3	33.5	33.5	33.7	33.5	(34.0)	(34.3)	33.8
35.0	36.3	36.7	35.6	34.7	34.1	33.9	33.7	33.4	33.4	33.5	34.3	34.5
35.0	35.2	35.2	35.1	34.6	34.4	34.2	33.8	33.4	33.8	34.3	34.2	34.0
34.2	35.4	35.7	35.4	34.6	34.5	33.9	33.7	(33.7)	(33.8)	(33.9)	(34.2)	34.1
36.1	36.2	35.8	35.4	34.3	34.0	33.9	33.7	33.7	33.8	33.9	34.0	34.0
33.9	35.3	35.4	35.3	34.5	33.8	33.7	33.3	33.3	33.5	33.9	34.2	33.6
35.7	36.8	36.7	36.0	34.8	34.2	34.3	33.6	33.8	33.5	33.3	33.7	34.1
34.5	34.8	35.0	34.9	34.6	34.2	33.9	33.7	33.7	33.8	33.9	34.1	33.9
34.1	34.7	35.0	34.9	34.6	34.2	33.9	33.7	33.7	33.7	33.9	34.1	33.7

1° WEST, PLUS TABULAR MINUTES.

33.2	34.5	35.0	35.1	34.7	34.3	34.3	34.1	33.7	(33.9)	(34.2)	(34.4)	33.9
35.5	35.8	35.5	34.7	34.2	34.1	34.1	33.7	33.7	34.1	34.4	34.8	34.2
34.0	34.4	34.8	34.7	34.7	34.1	34.1	34.1	34.1	34.3	34.4	34.8	34.1
34.8	35.0	36.0	35.5	34.7	34.2	34.2	33.8	33.5	34.2	34.4	34.7	34.2
35.1	35.1	35.2	35.1	34.8	34.1	34.0	33.9	33.5	33.7	34.3	34.7	34.3
35.2	35.1	34.7	34.5	34.0	34.0	34.2	34.1	34.0	34.0	34.3	34.6	34.1
35.1	35.7	36.0	35.7	34.8	34.5	34.5	34.5	34.1	34.5	34.7	34.9	34.2
35.1	34.7	34.7	34.4	34.4	33.9	33.9	33.8	33.8	33.9	34.1	34.4	34.2
35.9	37.0	37.6	36.6	35.1	34.0	34.2	34.0	34.0	34.0	34.0	34.6	34.5
36.3	36.4	36.2	35.4	34.7	34.5	34.2	34.0	33.9	34.1	34.1	34.4	34.3
37.3	37.4	36.8	35.7	34.6	34.3	34.3	34.0	33.8	33.9	34.1	34.1	34.6
35.5	36.5	36.5	36.1	34.7	34.6	34.3	34.1	33.9	34.1	34.3	34.5	34.2
34.6	35.8	36.3	35.8	35.2	34.6	34.3	34.3	34.1	34.3	34.5	34.6	34.4
(35.5)	(36.3)	(36.4)	(36.2)	35.6	34.6	34.9	34.5	34.3	33.9	34.4	34.3	34.6
33.3	35.4	36.7	36.4	34.9	34.9	34.9	34.2	34.2	34.3	34.4	34.5	34.2
35.1	36.9	36.8	36.3	35.4	35.1	34.5	34.5	34.4	34.5	34.6	34.5	34.8
33.9	35.3	35.7	35.7	35.1	34.8	34.7	34.4	34.4	34.4	34.7	34.7	34.1
36.3	37.5	37.2	36.5	35.1	34.3	34.3	33.9	34.3	34.4	34.4	34.5	34.4
35.9	36.0	35.9	35.1	34.8	34.4	34.4	34.4	34.4	34.5	34.4	34.8	34.5
35.8	36.8	36.7	36.0	35.2	34.7	34.7	34.3	34.0	34.2	34.7	34.9	34.3
36.1	36.0	36.4	36.7	35.5	34.7	34.6	34.7	34.7	34.7	34.8	34.7	34.9
34.4	35.3	36.0	36.1	35.6	34.8	34.7	34.6	34.3	34.4	34.7	34.8	34.4
36.0	36.7	37.1	36.5	35.4	34.5	34.3	34.5	34.6	34.3	34.5	34.7	34.8
34.7	35.9	36.3	35.8	34.9	34.3	34.5	34.3	34.2	34.5	34.7	35.1	34.4
34.7	35.8	36.1	35.8	34.8	34.1	34.1	33.9	34.0	34.1	34.3	34.7	34.4
36.4	36.9	37.0	36.5	35.1	34.6	34.5	34.0	33.8	34.1	33.9	34.1	34.8
34.7	35.9	36.6	36.5	35.4	35.0	34.6	34.4	34.1	34.5	34.2	34.5	34.5
37.2	37.4	37.0	36.5	35.3	34.6	34.2	33.9	33.8	33.8	34.2	34.6	34.8
34.5	36.1	36.7	36.4	35.6	34.7	34.5	33.5	34.1	34.1	34.4	34.5	34.4
36.7	37.9	38.1	37.6	36.4	35.1	34.9	34.7	34.6	34.5	34.5	34.5	35.1
34.5	35.8	36.9	36.9	36.3	35.2	34.9	34.9	34.9	34.9	34.9	34.9	34.8
35.3	36.1	36.3	35.9	35.1	34.5	34.4	34.2	34.1	34.2	34.4	34.6	34.4
35.1	35.9	36.1	35.8	35.1	34.6	34.5	34.4	34.2	34.3	34.5	34.8	34.4

Interpolated values are in parentheses.

APRIL, 1903.

Day.	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.
1*	380	380	381	382	384	382	382	386	393	393	391	390
2	379	381	379	381	383	382	389	393	(396)	(399)	(402)	404
3*	379	379	381	383	384	383	385	392	394	400	401	393
4	381	381	383	387	389	389	388	386	392	401	403	399
5	387	374	376	379	379	384	390	383	389	(387)	(386)	384
6	331	349	359	367	379	359	359	373	345	367	365	351
7	344	344	347	350	355	355	354	355	361	364	371	372
8	358	359	362	364	367	366	364	365	369	378	382	385
9	357	370	367	361	361	364	369	364	367	359	357	354
10	368	368	367	368	370	371	370	367	362	359	364	372
11	371	369	370	368	368	367	364	361	361	367	367	367
12*	366	368	370	369	371	370	369	369	369	382	384	389
13	367	370	369	370	369	370	372	372	372	380	390	390
14	374	367	373	375	374	375	370	366	373	386	394	391
15	377	377	380	376	377	381	380	380	379	381	385	379
16*	371	368	369	373	374	376	379	379	380	384	389	386
17	374	375	376	375	380	383	382	381	387	391	388	380
18	377	377	378	379	381	384	378	372	382	387	386	377
19*	367	374	368	367	370	372	377	383	386	384	378	372
20*	368	366	365	368	369	374	377	378	384	391	394	396
21*	374	374	372	375	377	373	374	372	377	380	377	378
22	371	372	373	376	375	374	374	374	384	393	399	396
23	369	372	372	372	376	375	373	371	377	382	379	394
24*	378	379	378	377	378	380	383	386	389	394	395	393
25	382	384	383	384	388	386	388	389	395	400	399	391
26	384	387	387	387	387	384	386	387	398	404	401	400
27	366	370	370	375	378	378	378	382	393	398	398	394
28*	373	371	373	374	375	379	378	377	380	392	394	395
29	376	376	380	378	377	377	380	387	392	398	396	394
30*	380	382	381	380	381	380	382	382	382	384	383	379
Mean	371	372	373	374	376	376	376	377	380	386	387	385
Mean*	374	374	374	375	376	377	379	380	383	388	389	387

MAY, 1903.

1	375	376	378	378	386	377	382	378	370	372	367	365
2*	373	372	373	375	375	378	377	375	375	381	382	385
3*	375	378	378	379	381	378	379	375	382	384	383	381
4	373	374	375	377	375	378	381	381	384	385	385	382
5	344	356	359	364	374	370	372	372	369	371	370	369
6	369	376	374	371	368	379	398	395	396	393	387	373
7	369	370	370	373	376	377	374	374	381	387	390	386
8	379	379	378	373	378	378	378	377	387	394	393	395
9	373	375	377	378	377	375	370	369	372	375	375	373
10*	379	380	381	382	382	387	385	382	380	381	384	385
11	379	379	377	384	377	382	381	373	374	373	375	377
12*	375	377	378	379	379	380	380	381	396	396	396	398
13	372	375	377	379	379	378	379	383	391	388	383	386
14*	374	372	373	371	372	375	379	381	383	385	385	383
15*	377	375	373	373	374	371	378	382	388	390	392	388
16	373	371	375	376	377	380	382	388	387	393	399	398
17*	366	368	374	375	377	380	382	382	380	377	377	378
18*	371	368	370	371	371	372	374	377	383	387	387	381
19*	371	372	371	372	373	375	375	372	375	381	390	390
20	376	378	378	380	381	384	383	379	378	383	398	414
21	378	375	375	375	375	378	380	376	372	380	375	376
22	379	379	376	380	383	386	388	389	387	391	391	390
23*	372	368	361	361	368	372	368	364	369	379	386	386
24	369	371	374	377	380	382	380	382	380	386	391	394
25	368	368	367	370	371	377	380	382	383	388	395	397
26	366	366	365	367	369	370	373	379	391	399	402	396
27	369	369	371	372	372	374	378	381	388	398	402	398
28	358	357	358	361	361	362	364	367	368	374	374	372
29	368	368	367	367	368	374	375	376	381	389	393	400
30	369	367	370	373	373	373	377	380	384	381	385	381
31	373	373	375	374	372	371	377	383	388	394	396	395
Mean	371	372	373	374	375	377	378	379	381	385	387	386
Mean*	373	373	373	374	375	377	378	377	381	384	386	386

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

29000 γ , PLUS TABULAR QUANTITIES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
384	381	381	382	380	377	370	371	373	369	376	379	381
395	394	393	388	383	381	386	381	380	375	377	380	387
390	382	379	374	378	378	380	379	378	378	378	379	384
403	402	393	391	391	387	383	377	379	379	380	387	389
381	385	384	383	382	381	381	404	397	387	373	347	383
332	329	320	326	333	336	339	341	342	341	341	341	347
368	365	360	358	348	347	355	358	360	357	357	358	357
384	384	378	375	373	366	355	347	346	372	370	359	368
363	361	357	360	362	352	364	368	365	367	366	367	363
374	373	371	362	358	359	364	367	363	368	367	368	367
369	375	376	375	361	363	364	362	360	366	363	363	367
389	387	382	378	367	363	366	365	365	365	366	366	372
390	393	390	380	373	370	373	371	370	372	372	374	376
390	388	390	381	380	378	382	381	379	380	380	380	379
378	376	373	365	356	356	362	365	367	367	367	370	373
384	387	381	373	369	370	372	374	373	374	374	373	376
379	374	370	372	368	368	372	371	372	372	371	375	376
377	368	373	364	362	363	362	364	363	364	365	367	373
374	379	375	371	371	373	370	367	366	367	369	368	373
391	387	380	373	369	368	368	369	374	376	376	374	376
380	384	379	375	370	369	370	368	369	371	371	370	374
397	390	386	385	375	369	366	368	369	370	370	369	378
389	389	384	381	378	379	379	379	381	383	383	381	379
396	393	400	388	381	381	380	380	381	377	377	380	384
391	389	388	379	378	387	390	390	387	386	383	385	388
400	399	389	374	365	363	356	355	352	350	373	368	381
394	387	385	381	369	370	369	370	369	368	373	370	379
391	393	383	380	368	370	373	371	374	374	373	375	379
395	394	390	384	371	371	374	376	376	379	381	381	383
385	385	385	387	378	377	379	379	378	377	378	376	381
384	382	379	375	370	369	370	371	370	371	372	371	376
386	386	382	378	373	373	373	372	373	373	374	374	378

29000 γ , PLUS TABULAR QUANTITIES.

369	371	368	369	367	369	373	373	373	373	372	373	373
380	379	376	371	373	372	371	372	374	375	374	375	376
376	374	376	379	376	378	378	378	376	376	374	373	378
378	377	378	374	367	359	366	360	348	330	329	339	369
370	362	364	363	361	366	368	370	370	370	371	374	367
370	363	361	356	356	362	366	370	369	376	366	366	373
388	379	377	379	380	378	378	380	379	379	378	382	378
392	386	381	373	369	368	368	376	375	372	375	373	379
369	371	370	367	370	371	376	376	376	376	377	379	374
382	381	373	372	373	375	375	376	376	374	376	378	379
375	378	381	381	378	376	373	374	374	374	377	375	377
393	388	380	377	372	376	374	374	376	376	375	374	381
382	380	378	371	372	373	375	378	378	379	377	377	379
382	376	379	373	365	365	367	369	369	370	367	370	374
385	383	382	379	374	375	375	374	371	374	374	373	378
390	383	383	380	376	386	390	383	373	371	368	367	381
378	377	374	367	366	365	369	370	368	368	368	367	373
378	376	373	371	369	371	372	371	370	368	370	371	374
393	390	383	373	370	372	375	375	375	375	376	375	377
420	416	407	396	385	384	386	385	383	383	385	381	388
378	385	384	380	373	370	369	373	377	378	379	377	377
390	385	383	378	377	380	377	373	376	379	371	374	382
385	376	370	363	369	369	365	364	367	368	369	370	370
391	381	371	366	359	358	359	360	376	366	367	370	375
391	380	368	364	360	362	361	364	361	360	361	363	373
393	386	374	370	369	369	369	369	369	371	370	370	376
395	389	378	372	371	369	367	375	374	373	368	362	378
370	370	368	361	359	362	366	364	362	363	369	371	365
394	386	378	369	362	359	357	359	361	363	365	362	373
374	369	361	363	358	366	365	364	366	364	369	372	371
397	392	382	376	372	373	376	378	379	379	380	380	381
384	380	376	372	369	370	371	372	372	371	371	371	376
383	380	377	372	371	372	372	372	372	372	372	373	376

JUNE, 1903.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	381	382	386	385	387	384	377	376	378	377	374	373
2.....	369	375	368	370	368	373	373	372	373	384	380	378
3.....	365	370	370	369	370	372	375	382	378	375	371	367
4.....	373	365	364	366	369	374	367	363	367	373	375	374
5.....	365	369	368	367	368	370	373	381	388	386	386	381
6*.....	374	375	375	373	374	373*	370	376	386	392	393	391
7*.....	373	372	371	372	374	376	374	372	374	383	392	393
8.....	374	376	376	376	378	378	378	379	386	396	403	407
9*.....	372	374	375	376	380	379	379	375	387	397	399	400
10.....	377	378	378	375	377	377	374	372	376	380	384	382
11*.....	382	383	385	385	385	385	384	389	391	400	402	401
12*.....	378	382	383	383	381	382	380	380	382	387	392	392
13*.....	377	377	376	379	377	379	380	377	386	399	401	395
14.....	384	386	389	385	387	385	383	383	385	385	377	379
15.....	377	376	377	378	381	381	380	383	386	385	382	381
16.....	367	370	371	374	377	379	379	376	384	398	405	399
17.....	357	365	364	368	368	373	374	375	381	381	384	381
18.....	358	362	363	365	367	371	372	377	379	381	379	380
19.....	375	369	369	371	376	381	383	381	382	384	382	371
20*.....	368	366	370	371	373	374	374	375	381	385	389	389
21*.....	370	368	374	370	368	368	370	369	370	374	378	375
22.....	366	365	367	369	372	374	372	370	370	374	386	386
23.....	361	362	361	359	361	368	368	368	375	382	383	373
24.....	356	362	364	363	364	364	362	359	362	364	364	360
25*.....	360	361	361	355	358	360	364	370	373	380	381	377
26.....	368	368	369	367	365	367	363	354	354	368	376	377
27*.....	374	373	374	373	374	377	378	374	382	393	398	394
28.....	380	375	378	379	389	391	391	391	390	388	391	389
29.....	358	365	364	361	364	373	383	391	400	398	385	386
30.....	350	355	356	358	357	362	367	366	363	368	368	368
Mean.....	370	371	372	371	373	375	375	375	379	384	385	383
Mean*.....	373	373	374	374	374	375	375	376	381	389	392	391

JULY, 1903.

1*.....	360	363	365	369	363	369	374	375	370	372	377	383
2*.....	363	369	369	369	370	370	374	375	379	381	377	378
3.....	366	366	367	367	370	370	375	378	380	382	380	376
4*.....	367	365	367	369	370	372	377	379	383	388	388	385
5.....	364	364	365	367	369	373	380	381	386	393	395	391
6.....	361	359	360	366	367	368	373	371	373	381	385	385
7.....	356	357	359	358	359	361	361	355	361	366	370	369
8.....	361	363	363	363	364	368	373	376	384	393	397	396
9.....	365	363	363	364	366	368	369	370	377	384	387	388
10.....	362	364	366	366	369	369	370	371	381	391	388	375
11.....	348	363	356	361	364	363	364	371	381	383	384	385
12*.....	357	359	360	359	361	364	366	366	369	373	382	380
13*.....	361	363	364	371	366	372	373	375	373	375	381	372
14.....	360	365	364	367	371	371	371	368	370	365	362	368
15*.....	363	361	365	365	365	367	363	367	376	382	387	389
16.....	363	363	364	365	366	367	373	381	385	382	388	387
17*.....	358	358	362	366	370	372	371	371	375	379	379	377
18.....	358	362	364	366	369	373	375	374	374	385	393	401
19.....	374	359	363	362	366	355	361	364	366	366	359	355
20*.....	358	356	359	359	360	362	361	362	368	375	374	374
21.....	369	364	362	362	362	365	366	368	372	375	375	365
22.....	355	356	356	357	359	361	361	364	372	379	384	379
23*.....	361	359	359	359	362	363	367	373	373	373	372	367
24.....	365	366	365	365	365	364	363	371	382	393	394	392
25.....	378	379	376	377	375	373	379	379	383	385	389	390
26.....	371	371	382	368	374	367	378	371	375	373	367	356
27.....	359	360	363	360	358	361	369	357	359	367	370	364
28.....	347	350	364	357	358	357	361	364	367	367	363	362
29.....	363	359	359	358	360	361	366	373	379	377	374	366
30*.....	352	353	353	356	356	358	363	365	373	378	374	366
31.....	351	355	362	360	362	364	372	386	393	392	388	378
Mean.....	361	362	363	364	365	366	369	371	375	379	380	377
Mean*.....	360	361	362	364	364	367	369	371	374	378	379	377

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

20000 r , PLUS TABULAR QUANTITIES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
r	r	r	r	r	r	r	r	r	r	r	r	r
365	353	354	349	356	357	368	366	354	366	349	357	369
375	354	359	358	363	367	366	365	359	375	369	368	369
369	368	360	356	362	366	365	367	366	377	368	366	369
371	366	360	354	353	355	361	362	366	363	365	365	365
373	367	362	362	365	368	369	370	370	371	373	373	372
384	377	368	364	366	370	370	370	370	373	373	372	375
391	386	377	372	370	372	375	376	376	377	376	377	377
405	391	382	379	377	376	377	374	373	373	370	370	381
395	397	386	374	370	372	377	377	378	377	377	376	381
379	377	380	377	376	376	378	379	381	380	383	382	378
393	389	378	373	374	376	378	379	379	379	377	376	384
386	382	377	377	371	370	371	369	370	372	374	376	379
389	387	385	383	380	382	383	382	380	381	380	384	383
381	380	378	374	372	372	382	373	372	373	376	378	380
376	371	364	356	356	355	357	359	364	364	365	367	372
397	395	386	382	364	346	343	345	354	363	358	357	374
378	380	377	367	368	368	367	367	364	365	360	352	370
373	368	365	366	367	365	364	366	365	363	369	377	369
365	366	362	352	356	369	365	361	365	371	367	367	370
388	387	382	375	372	374	374	368	370	363	365	368	375
371	372	363	361	362	361	363	366	363	367	365	370	368
382	384	375	371	361	360	367	360	361	366	364	361	370
374	373	371	358	348	348	354	358	354	352	354	350	363
358	361	352	342	346	346	348	352	353	361	359	359	358
370	363	356	351	354	356	362	362	364	364	366	367	364
379	377	371	363	364	367	369	371	371	373	374	374	369
391	387	383	375	372	372	376	378	376	376	378	375	379
374	387	364	339	333	346	352	353	356	358	359	362	371
387	385	374	382	363	352	349	361	357	352	366	359	371
362	354	347	351	348	352	353	354	355	356	365	361	358
379	375	370	365	363	364	366	366	366	368	368	368	372
386	383	376	370	369	370	373	373	373	373	373	374	377

20000 r , PLUS TABULAR QUANTITIES.

380	376	371	363	362	363	364	367	363	367	369	366	369
376	372	368	369	366	365	369	366	365	363	363	369	370
375	370	363	362	363	366	367	369	368	366	365	367	370
377	374	369	365	364	365	366	366	367	365	365	367	372
387	382	378	377	371	372	366	363	358	350	356	372	373
380	376	372	361	353	353	357	355	357	358	358	357	366
369	369	366	361	356	356	358	360	360	362	362	363	361
392	390	383	374	370	369	373	369	368	366	368	367	375
390	388	373	364	361	357	359	354	348	356	358	362	368
365	359	361	351	348	345	346	349	349	351	347	349	362
380	378	374	364	358	356	356	356	354	351	351	356	365
370	365	361	353	351	350	350	352	356	360	361	361	362
371	370	370	365	366	366	364	362	363	365	366	362	368
372	376	376	373	371	363	363	368	367	365	370	366	368
383	384	379	371	364	361	365	364	365	365	364	363	370
389	388	384	374	365	359	368	363	359	358	363	367	372
377	371	364	355	357	356	359	359	361	360	359	363	366
391	384	377	368	361	361	362	359	357	357	354	363	370
357	363	359	357	357	355	357	356	355	358	357	361	360
365	362	356	351	353	355	355	355	357	356	356	361	360
355	358	356	353	357	358	357	357	356	356	357	355	362
372	361	356	347	349	356	357	359	360	361	363	363	362
365	363	362	356	353	354	358	357	358	362	362	364	363
387	376	368	367	365	368	368	366	366	369	372	374	372
389	378	383	372	370	352	358	363	365	363	373	375	375
339	334	337	343	341	348	349	347	350	354	353	352	359
357	350	352	348	345	345	347	341	338	335	350	346	354
361	357	353	351	345	338	349	350	355	355	357	357	356
359	359	354	351	347	345	352	344	347	349	350	352	358
364	363	357	349	347	348	352	349	349	351	352	353	358
371	356	346	342	342	344	348	344	344	348	348	350	360
373	369	365	360	357	356	359	358	358	358	360	361	365
373	370	366	360	358	358	360	360	360	361	362	363	366

AUGUST, 1903.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	354	355	355	362	358	359	356	367	372	379	385	386
2.....	354	355	355	362	358	359	356	363	378	384	389	392
3*.....	363	361	361	362	362	363	363	374	389	394	392	384
4.....	359	364	358	360	360	360	364	368	376	383	385	388
5.....	324	337	340	344	346	351	354	354	361	370	372	366
6*.....	354	352	351	351	355	353	354	362	370	370	365	362
7*.....	358	356	357	355	356	359	365	373	380	380	381	382
8.....	354	359	358	358	359	364	368	368	374	380	386	386
9*.....	353	354	356	358	357	356	358	357	371	381	372	364
10.....	352	352	350	349	352	354	356	360	371	374	376	376
11.....	366	362	375	359	364	360	368	377	387	385	385	375
12.....	352	352	354	354	355	353	350	351	360	366	368	365
13.....	350	351	352	352	356	359	368	372	378	381	380	373
14.....	353	355	354	356	355	353	351	360	366	368	363	359
15*.....	353	347	347	348	347	349	352	357	364	365	361	352
16*.....	347	347	350	351	355	356	355	359	363	363	361	358
17.....	349	350	347	343	350	350	353	359	361	359	357	355
18*.....	357	359	360	359	357	358	357	360	369	379	379	377
19*.....	352	354	355	357	359	360	355	358	369	375	374	369
20.....	358	359	357	350	351	355	356	357	363	363	355	352
21.....	342	347	350	352	353	355	357	372	384	390	383	374
22.....	333	341	337	343	345	341	340	352	353	354	347	338
23.....	345	346	346	345	352	351	347	350	350	349	345	335
24.....	346	355	349	348	346	348	347	347	349	351	352	351
25.....	350	348	352	350	349	348	344	350	351	353	355	350
26.....	338	337	336	335	336	338	343	347	355	354	349	351
27.....	334	339	341	342	342	341	340	348	354	355	351	347
28*.....	341	342	344	346	346	345	340	346	354	358	357	351
29*.....	342	342	347	350	352	353	357	356	360	360	347	343
30.....	340	342	342	343	342	343	340	347	354	360	357	356
Mean.....	349	351	352	352	353	354	354	360	367	371	369	364
Mean*.....	351	351	352	353	354	354	354	359	368	372	369	365

SEPTEMBER, 1903.

1.....	353	354	358	361	362	364	362	362	368	373	362	354
2.....	343	345	348	349	351	350	352	356	358	357	356	349
3.....	351	349	352	354	351	352	350	351	352	353	346	341
4.....	357	358	356	356	354	357	355	352	368	376	(378)	(377)
5.....	350	348	351	355	355	354	351	361	353	355	350	338
6*.....	344	345	348	347	346	344	342	345	351	353	355	356
7.....	345	346	346	349	350	351	350	349	356	353	352	350
8.....	342	340	343	345	348	348	346	351	351	350	349	346
9*.....	337	344	344	344	345	347	343	337	339	345	350	353
10.....	343	343	345	344	344	347	347	349	346	347	339	330
11.....	342	340	338	337	340	342	340	344	352	362	362	358
12.....	345	346	340	341	345	348	360	355	352	339	337	333
13.....	336	334	335	338	339	340	344	346	345	345	350	348
14*.....	348	349	347	348	348	348	348	349	356	362	362	357
15*.....	340	341	341	342	342	342	342	340	341	345	345	346
16*.....	345	345	345	346	345	348	346	342	347	359	366	362
17*.....	348	350	350	351	353	351	356	353	352	352	353	360
18.....	345	345	346	349	352	348	349	347	350	358	364	364
19.....	350	343	338	338	334	329	336	337	340	334	334	316
20.....	321	320	327	327	329	326	317	327	329	333	332	324
21.....	337	335	336	338	337	336	332	322	322	321	324	322
22.....	341	344	342	345	345	343	333	329	329	333	331	330
23.....	327	332	332	336	335	328	334	331	329	320	338	336
24.....	333	341	339	337	338	330	334	335	333	339	342	335
25*.....	329	328	331	333	334	334	334	334	333	333	337	339
26*.....	329	329	334	336	338	337	337	337	338	338	341	340
27*.....	331	332	333	335	341	336	336	337	340	340	352	351
28.....	329	329	336	334	339	334	337	339	335	331	328	328
29.....	342	335	338	339	341	338	340	338	334	325	323	325
30*.....	323	324	325	327	329	333	330	330	337	338	338	336
Mean.....	340	340	341	343	344	343	343	343	345	346	347	343
Mean*.....	337	339	340	341	342	342	341	340	343	346	350	350

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

29000 r , PLUS TABULAR QUANTITIES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
r	r	r	r	r	r	r	r	r	r	r	r	r
379	364	355	348	340	340	343	347	348	347	349	352	352
387	376	364	357	358	360	363	360	358	356	359	361	366
376	368	357	354	352	353	354	356	357	359	361	363	366
373	368	357	354	352	351	346	346	342	332	340	336	360
362	351	345	345	342	341	342	346	346	348	351	353	350
354	347	340	337	341	344	349	351	354	354	357	358	354
378	373	365	359	353	352	354	357	352	346	346	352	362
384	372	357	347	346	347	348	350	351	354	355	357	362
362	359	353	347	343	345	346	349	350	357	357	353	357
368	361	356	351	349	351	355	359	359	362	367	364	359
354	341	343	342	346	337	336	342	343	347	358	361	359
358	351	351	347	348	352	355	355	354	351	350	359	355
359	350	338	340	337	337	339	345	350	346	350	352	355
357	351	349	342	331	338	340	343	343	342	352	350	351
348	346	341	341	345	345	345	344	345	346	346	347	349
353	342	337	337	339	342	347	347	344	346	348	350	350
351	343	342	348	352	357	358	358	358	358	357	356	353
371	362	354	341	341	348	349	350	351	351	353	352	358
366	365	358	351	349	349	351	353	354	354	356	356	358
347	350	348	339	335	331	332	334	340	341	341	339	348
356	352	350	346	342	324	315	307	319	342	329	334	349
339	336	336	330	325	329	332	340	346	348	346	353	341
322	327	329	332	332	330	337	342	341	343	350	345	341
355	353	350	348	345	347	347	347	347	346	352	353	349
346	341	340	337	336	...	...	...	...	...	...	...	...
320	316	315	317	317	323	322	322	332	329	335	345	...
...	...	...	...	334	334	329	328	335	334	333	332	...
341	334	334	335	331	332	333	334	337	337	339	341	340
347	339	330	330	328	331	332	335	336	340	342	344	342
341	333	331	329	320	327	331	332	332	336	337	338	342
353	347	339	339	334	339	339	342	346	347	345	350	345
358	352	346	343	341	342	344	345	346	348	350	351	353
360	354	347	343	342	344	346	348	348	349	350	352	354

 29000 r , PLUS TABULAR QUANTITIES.

349	342	337	334	334	337	340	341	342	341	343	343	351
339	334	333	334	341	346	346	344	346	347	347	352	347
339	341	341	345	349	354	354	354	357	356	360	360	350
379	365	357	357	353	346	329	338	343	344	351	348	357
336	332	327	328	332	334	334	337	339	353	347	342	344
354	346	344	341	335	339	340	340	342	344	347	348	346
347	340	336	342	333	323	314	322	315	324	334	339	340
337	321	320	324	330	334	334	332	331	342	344	338	339
344	334	328	330	330	331	330	336	340	338	345	343	340
322	327	328	321	323	324	328	332	334	336	340	339	337
355	351	343	322	313	325	335	338	338	338	339	342	342
336	325	314	307	310	316	316	322	328	331	334	336	334
345	343	340	341	339	339	336	337	342	343	343	347	341
346	336	330	333	337	340	340	338	341	339	341	339	345
346	346	342	341	342	345	346	347	351	348	348	347	344
355	348	347	345	341	344	344	345	346	346	348	349	348
362	353	345	344	343	345	346	346	346	344	346	349	350
355	346	338	340	341	347	346	347	345	348	349	345	348
296	292	291	310	302	289	299	303	323	303	298	319	319
322	325	321	320	321	320	327	331	329	330	333	329	326
322	323	325	(327)	330	331	332	336	339	340	342	342	331
323	320	324	329	329	327	321	316	331	323	318	326	330
339	334	326	325	323	327	333	322	330	327	328	334	330
330	325	326	326	324	325	324	323	326	327	325	330	331
336	333	324	320	322	325	324	324	324	324	326	328	330
328	323	321	321	320	320	323	328	328	331	332	332	331
347	343	343	340	338	324	321	327	331	328	330	329	336
328	326	332	337	336	338	338	343	342	344	341	331	335
325	319	312	312	313	319	314	323	325	324	322	328	327
330	319	314	307	315	317	319	321	321	326	322	323	325
339	334	330	330	330	331	331	333	336	336	337	339	338
345	338	334	332	332	333	333	335	337	337	338	339	339

Interpolated values are in parentheses.

OCTOBER, 1903.

Day	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	328	333	336	334	334	335	336	344	351	354	349	348
2.....	331	332	334	341	341	342	332	338	348	344	345	343
3*.....	325	322	322	326	327	329	331	337	339	337	337	333
4*.....	335	336	339	340	339	339	339	344	348	351	349	347
5.....	334	334	331	336	342	338	340	341	344	342	341	342
6.....	326	331	337	335	338	338	343	349	350	349	354	347
7.....	332	328	330	334	334	337	340	344	343	341	342	344
8*.....	321	319	323	328	327	329	329	327	316	314	324	331
9*.....	324	325	325	329	330	331	334	333	330	327	324	324
10*.....	337	335	338	342	345	346	346	345	341	339	333	333
11.....	327	329	334	335	339	339	340	344	347	346	343	335
12.....	318	323	331	336	342	332	349	355	346	346	340	316
13.....	295	291	300	304	297	318	312	308	310	318	317	317
14.....	297	296	297	298	305	312	308	316	313	308	297	288
15*.....	301	303	302	307	310	314	318	316	311	313	314	320
16.....	307	308	310	314	313	315	316	322	323	320	315	310
17.....	313	314	314	317	321	321	326	335	337	329	326	328
18.....	...	...	...	...	...	...	...	...	...	...	...	...
19.....	...	...	...	...	...	...	...	...	...	...	...	...
20.....	319	322	321	322	324	323	322	323	321	322	325	326
21.....	327	323	323	321	319	317	318	317	318	318	319	341
22.....	...	...	...	...	...	...	...	...	...	...	...	...
23.....	...	...	...	...	...	...	...	...	...	...	...	...
24.....	...	...	...	...	...	...	...	...	...	...	...	...
25.....	...	...	...	...	...	...	...	...	...	...	...	...
26.....	...	...	...	...	...	...	...	...	...	...	...	...
27.....	...	...	...	...	...	...	...	...	...	...	...	...
28.....	...	...	...	...	...	...	...	...	...	...	...	...
29.....	...	...	...	...	...	...	...	...	...	...	...	...
30.....	...	...	...	...	...	...	...	...	...	...	...	...
31.....	...	...	...	...	...	...	...	...	...	...	...	...
Mean.....	321	322	324	327	328	330	331	334	333	333	332	330
Mean*.....	324	323	325	329	330	331	333	334	331	330	330	331

NOVEMBER, 1903.

1.....	...	...	...	...	...	...	...	...	...	...	...	...
2.....	275	272	278	275	281	280	276	273	270	267	265	265
3.....	266	271	270	270	274	271	281	279	282	284	285	279
4.....	276	276	287	277	282	277	279	278	267	281	283	291
5*.....	276	278	281	281	285	289	297	296	306	306	306	299
6*.....	285	283	287	289	287	286	291	292	292	292	288	281
7.....	286	283	291	290	295	298	304	304	299	295	295	291
8*.....	272	277	286	283	287	295	292	289	286	285	289	289
9.....	276	278	280	286	288	294	296	299	301	306	309	297
10.....	271	270	273	274	275	276	278	279	284	283	274	269
11*.....	278	276	283	279	281	285	288	289	284	282	282	280
12*.....	280	282	284	284	285	285	291	295	294	295	293	287
13.....	281	281	280	283	285	287	292	296	298	298	295	293
14*.....	294	293	294	295	295	297	297	297	295	295	291	283
15*.....	290	289	290	290	293	295	300	301	302	300	296	288
16.....	292	292	293	296	299	303	304	305	303	305	303	296
17.....	272	278	281	279	286	295	296	296	296	299	299	295
18.....	278	276	277	281	288	295	299	319	315	305	304	304
19.....	254	258	264	273	274	279	284	289	293	295	296	291
20.....	286	289	295	293	291	293	298	299	297	299	303	300
21.....	271	275	279	284	288	289	298	310	315	318	316	310
22.....	283	279	277	278	291	296	303	293	297	296	295	290
23.....	292	291	294	293	292	291	296	293	296	295	285	287
24*.....	290	294	296	297	299	299	303	303	304	299	294	291
25*.....	296	294	297	297	296	297	300	300	297	298	300	303
26*.....	297	297	296	299	302	302	306	307	307	302	301	306
27.....	300	302	304	304	303	305	310	312	312	307	306	302
28.....	308	310	310	312	314	317	318	320	316	316	317	317
29.....	279	283	287	290	293	296	303	303	307	309	312	312
30.....	301	302	305	308	311	310	308	316	317	313	316	308
Mean.....	284	284	287	288	290	292	296	298	298	297	296	293
Mean*.....	286	286	289	289	291	293	296	297	297	295	294	291

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

29000 γ , PLUS TABULAR QUANTITIES.

18 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
$\bar{\gamma}$	$\bar{\gamma}$	$\bar{\gamma}$	$\bar{\gamma}$	$\bar{\gamma}$	$\bar{\gamma}$	$\bar{\gamma}$	$\bar{\gamma}$	$\bar{\gamma}$	$\bar{\gamma}$	$\bar{\gamma}$	$\bar{\gamma}$	$\bar{\gamma}$
342	332	335	334	327	311	311	311	318	326	328	331	333
343	336	327	321	319	318	319	322	325	326	326	323	332
326	316	(320)	(321)	326	329	329	329	328	331	330	331	328
343	335	322	319	322	325	323	326	326	327	332	333	335
337	334	320	300	304	318	322	320	327	324	323	325	330
338	335	324	311	313	321	319	319	324	322	323	336	333
337	325	315	312	317	317	319	320	319	319	317	331	329
329	319	314	312	312	314	317	317	314	320	322	322	321
324	323	323	322	324	329	328	328	327	329	330	331	327
331	329	329	330	330	329	329	329	328	328	323	327	334
328	330	327	329	331	322	310	308	309	311	313	318	329
289	284	268	238	232	262	218	223	278	285	262	276	298
304	287	272	273	271	271	287	269	289	288	291	302	295
288	287	277	277	282	291	294	298	303	301	302	304	297
315	304	302	299	297	296	300	301	303	303	303	304	306
299	289	290	292	294	302	303	305	305	306	308	312	307
323	310	308	312	...	...	...	...	...	...	...	...	...
...
...	315	305	304	306	309	310	310	312	315	314	317	...
326	323	323	325	324	325	326	327	328	330	331	331	325
336	332	330	330	330	331	330	330	327	326	325	323	326
...
...
...
...
...
...
...
...
...
324	318	312	308	309	312	310	310	315	317	316	320	321
328	321	318	317	318	320	321	322	321	323	323	325	325

29000 γ , PLUS TABULAR QUANTITIES.

...
253	254	247	259	263	263	261	266	268	275	276	270	268
277	275	261	261	267	274	276	273	273	274	274	275	274
289	283	273	264	251	249	257	255	271	274	274	274	274
295	292	287	282	282	286	284	292	288	284	281	283	289
277	277	280	280	278	278	279	275	286	282	283	286	284
283	275	267	265	271	270	271	272	271	271	268	271	283
283	284	277	268	268	272	274	276	279	278	276	278	281
300	296	291	291	293	283	269	257	259	260	265	263	285
257	264	270	267	261	261	264	263	271	274	273	276	271
270	272	274	276	278	276	279	280	282	278	276	280	280
287	286	283	278	279	284	279	279	275	281	283	283	285
295	291	285	285	283	287	291	291	289	291	296	297	290
281	280	278	280	284	287	288	287	288	287	289	291	289
280	278	279	280	283	288	290	291	290	290	290	292	290
290	279	274	266	270	273	270	268	265	268	270	268	286
291	284	281	283	277	283	288	282	278	274	278	282	286
299	297	291	280	268	251	251	247	255	256	248	249	281
287	284	279	270	267	274	277	278	281	283	284	284	279
295	290	286	277	268	265	260	259	253	261	271	273	283
300	297	296	297	292	287	267	255	262	260	263	271	287
285	286	286	271	273	270	278	285	288	289	291	292	286
291	288	286	285	281	289	292	291	292	291	293	291	291
290	284	284	283	288	291	291	290	293	293	295	295	294
300	296	293	293	295	295	293	291	292	294	294	296	296
301	301	304	309	299	295	296	298	298	298	299	298	301
304	305	298	298	303	306	310	311	309	307	308	309	306
315	314	316	319	313	313	306	296	294	293	288	279	309
309	304	300	295	295	293	293	293	290	293	296	297	307
304	299	301	305	306	310	313	313	312	309	304	306	308
289	287	284	282	281	281	281	280	281	282	282	283	287
286	285	284	283	283	285	285	286	287	286	287	288	289

Interpolated values are in parentheses.

DECEMBER, 1903.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	<i>r</i> 308	<i>r</i> 307	<i>r</i> 314	<i>r</i> 317	<i>r</i> 319	<i>r</i> 316	<i>r</i> 326	<i>r</i> 327	<i>r</i> 330	<i>r</i> 332	<i>r</i> 329	<i>r</i> 325
2.....	284	286	287	280	287	289	299	310	314	317	315	307
3*.....	288	288	288	291	293	295	300	303	300	300	298	297
4.....	289	293	295	296	298	303	312	324	327	325	323	311
5.....	292	296	297	298	298	299	309	307	307	301	299	300
6.....	300	308	303	302	303	299	309	312	306	306	304	304
7.....	296	297	304	302	306	311	312	313	315	316	313	298
8*.....	305	304	306	303	304	305	308	309	308	302	302	298
9.....	305	305	309	310	308	308	310	310	310	315	317	319
10*.....	306	310	312	311	313	314	319	321	316	314	314	312
11.....	307	308	310	310	310	311	310	307	301	305	306	304
12.....	310	310	313	315	315	316	319	316	314	312	303	298
13.....	307	310	312	310	309	312	316	320	309	289	276	261
14.....	256	260	261	265	266	267	269	269	268	272	275	272
15.....	285	285	287	288	290	294	297	301	297	289	284	290
16*.....	(293)	(294)	(296)	(296)	(301)	(303)	(307)	310	308	309	303	300
17.....	298	300	303	301	302	303	310	310	306	305	304	302
18*.....	(304)	(303)	(307)	(304)	(305)	(307)	(309)	(310)	(312)	310	303	295
19*.....	311	312	311	314	315	316	320	319	318	313	309	309
20.....	303	308	317	320	318	319	321	324	308	306	294	290
21.....	294	300	296	303	305	307	311	312	306	299	300	304
22*.....	310	312	310	311	311	316	319	320	316	311	311	310
23.....	310	311	312	315	313	313	315	316	308	306	304	307
24*.....	312	313	313	314	316	317	321	322	319	318	314	310
25.....	314	317	317	320	323	323	324	324	322	320	318	320
26.....	329	327	330	331	328	329	330	330	329	325	322	329
27*.....	314	316	318	318	317	323	326	327	327	323	316	308
28*.....	313	316	317	318	321	321	322	329	326	321	318	323
29.....	320	320	320	323	324	323	327	(330)	(334)	(334)	(332)	330
30.....	315	330	327	319	314	321	325	320	316	315	317	305
31.....	272	277	275	281	276	281	289	298	297	299	300	297
Mean.....	302	304	305	306	307	308	313	315	312	310	307	304
Mean*.....	306	307	308	308	310	312	315	317	315	312	309	306

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

29000 r , PLUS TABULAR QUANTITIES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
r	r	r	r	r	r	r	r	r	r	r	r	r
323	320	315	304	300	301	301	295	293	288	287	284	311
302	298	291	287	287	290	292	293	291	290	299	294	295
298	293	287	283	284	287	288	290	291	289	288	288	292
299	303	285	270	279	285	285	282	293	294	293	293	298
292	294	294	282	287	292	292	294	295	296	305	303	297
297	308	294	299	290	284	275	279	280	285	288	292	297
300	304	305	293	288	290	296	299	300	300	302	305	303
294	296	298	300	295	296	297	295	296	296	304	302	301
318	316	318	315	311	309	306	303	303	304	303	307	310
308	306	307	307	304	308	308	307	309	310	308	308	310
301	301	301	305	308	309	308	308	308	307	306	308	307
297	302	304	309	312	313	312	314	311	309	308	309	310
244	223	205	180	177	203	208	233	238	245	246	245	262
276	279	280	280	278	279	279	278	281	283	286	285	274
286	283	280	283	286	289	290	292	293	294	293	(296)	290
296	298	297	298	298	299	299	299	300	303	300	300	300
301	300	299	301	301	305	305	305	305	307	307	309	304
292	293	299	305	307	308	309	310	310	310	310	308	305
309	311	310	310	313	309	299	303	305	309	310	313	311
295	301	297	295	299	299	301	301	299	298	301	295	305
305	302	302	299	298	304	305	307	307	305	308	307	304
311	306	304	304	306	306	309	310	309	306	308	307	310
313	312	307	303	309	310	310	311	312	312	311	312	310
309	306	305	312	314	313	313	312	313	315	314	315	314
321	319	320	319	321	326	324	323	322	323	327	328	321
329	325	324	321	320	318	318	316	314	314	315	314	324
307	303	307	308	312	316	314	313	315	312	314	315	315
321	321	322	320	318	315	313	314	314	316	318	319	319
325	325	324	324	323	322	325	324	321	322	341	318	325
300	293	293	299	302	302	299	280	265	254	263	261	301
292	288	279	287	291	294	291	290	(293)	(295)	(297)	298	289
302	301	298	297	297	299	299	299	300	300	302	301	304
304	303	304	305	305	306	305	305	306	307	307	308	308

Interpolated values are in parentheses.

JANUARY, 1904.

Day.	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	Noon.
1.....	299	302	303	303	303	304	308	308	298	296	290	274
2*.....	293	295	297	299	301	306	307	311	307	300	295	288
3.....	297	301	301	300	304	305	316	321	316	317	314	309
4.....	294	299	302	304	304	306	311	317	323	325	319	314
5*.....	300	298	299	299	303	299	310	313	302	300	300	303
6*.....	288	289	290	290	288	290	297	302	303	302	308	310
7*.....	297	298	300	302	299	293	294	302	304	301	301	297
8*.....	300	302	302	302	302	300	301	302	301	304	317	312
9.....	299	301	301	303	302	303	305	305	305	305	305	305
10.....	272	275	274	280	280	281	287	288	285	281	283	287
11.....	258	263	264	266	264	265	266	272	270	273	279	273
12*.....	279	282	282	281	281	282	288	286	282	280	275	267
13.....	280	280	283	283	285	287	289	286	282	277	275	279
14.....	285	285	285	287	288	287	288	287	283	286	295	293
15.....	307	310	310	310	314	319	322	323	325	330	(330)	(331)
16.....	296	296	303	304	308	312	315	307	323	308	296	277
17*.....	295	298	301	300	303	308	309	311	309	305	303	307
18*.....	300	301	302	302	304	305	304	305	303	301	297	299
19.....	299	301	301	303	304	304	306	306	302	303	316	321
20*.....	308	309	311	312	314	317	317	318	318	318	312	309
21.....	304	301	302	301	(302)	(306)	(311)	(315)	(315)	(313)	(313)	(312)
22.....	298	302	297	300	297	298	(303)	(304)	(299)	(295)	293	290
23.....	302	304	304	305	305	303	304	302	300	297	295	299
24*.....	305	307	307	305	306	305	(310)	(312)	(313)	(310)	(308)	305
25.....	(298)	(299)	(300)	(299)	(301)	(302)	(308)	(308)	(306)	(303)	299	295
26.....	...	...	...	...	...	...	...	...	...	...	...	...
27.....	...	...	...	...	...	...	...	...	...	...	...	...
28.....	318	318	320	319	322	335	335	344	349	343	327	328
29.....	281	285	299	298	297	305	309	313	312	308	300	295
30.....	294	302	298	302	298	299	304	305	302	299	308	292
31.....	296	295	300	303	300	300	307	304	305	304	303	293
Mean.....	294	296	298	299	299	301	304	306	305	303	302	299
Mean*.....	296	298	299	299	300	300	304	306	304	302	302	300

FEBRUARY, 1904.

1*.....	301	302	303	307	306	308	310	303	307	307	311	315
2.....	301	301	304	308	302	303	311	314	307	299	300	294
3.....	300	300	302	303	304	305	307	308	307	307	307	310
4.....	(310)	(312)	(313)	(314)	(314)	(315)	(319)	(320)	315	310	304	297
5.....	289	295	299	306	307	303	307	310	315	316	317	313
6*.....	297	298	299	300	304	303	308	310	314	300	309	302
7.....	298	297	298	301	305	306	306	311	302	312	303	308
8.....	291	291	295	297	297	298	303	311	306	306	312	307
9.....	298	300	300	303	302	302	305	306	302	296	306	308
10*.....	300	300	298	297	299	301	308	316	316	314	312	307
11.....	299	301	301	301	302	305	308	314	318	320	317	305
12*.....	301	299	301	303	302	302	310	(310)	(308)	306	306	309
13.....	296	299	301	308	309	314	326	326	328	331	316	312
14.....	295	294	292	295	298	300	302	305	304	301	303	299
15.....	280	290	292	297	299	303	303	308	306	310	311	314
16.....	305	297	294	297	298	302	309	316	319	322	331	318
17.....	293	297	296	300	299	301	304	308	303	304	308	304
18*.....	301	301	302	303	306	306	309	311	310	309	308	311
19*.....	296	298	300	301	302	302	306	312	313	313	313	313
20*.....	302	302	302	301	302	303	306	310	309	307	301	302
21*.....	301	303	303	305	307	309	312	317	318	317	314	312
22.....	300	304	305	307	306	307	310	313	316	313	309	302
23.....	311	314	314	316	314	314	319	322	326	327	322	316
24.....	297	298	297	301	304	307	312	314	317	313	309	308
25.....	305	310	314	314	320	322	328	330	331	332	326	323
26*.....	298	297	300	304	306	309	312	317	318	318	320	317
27.....	299	298	303	305	309	307	314	320	322	318	320	321
28.....	312	313	311	310	310	311	314	320	324	325	323	319
29*.....	303	304	305	307	307	309	310	309	308	307	307	304
Mean.....	299	301	302	304	305	306	310	313	314	312	312	309
Mean*.....	300	300	301	303	304	305	309	312	312	310	310	309

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

29000 γ , PLUS TABULAR QUANTITIES.

18 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
275	281	273	284	292	294	292	290	290	294	292	297	293
285	278	279	289	295	292	288	293	294	290	292	295	295
304	298	294	292	292	290	287	288	295	290	286	293	300
306	298	293	291	293	295	291	287	291	290	292	295	302
306	291	284	284	282	277	277	278	276	279	280	288	293
308	302	299	296	290	288	288	287	288	291	295	295	295
292	293	293	296	298	296	295	293	292	293	296	298	297
307	300	300	297	303	299	296	298	295	297	299	299	301
302	292	294	299	293	281	279	272	272	274	270	273	293
294	301	316	302	298	297	295	272	266	271	266	270	284
272	267	265	264	273	271	272	275	278	281	282	281	271
267	270	270	277	281	282	283	281	281	282	285	283	279
285	285	282	282	282	282	285	287	288	290	288	287	284
289	318	307	307	306	306	306	308	309	309	309	308	297
331	313	313	312	309	305	303	304	297	295	296	297	313
281	273	280	275	277	284	287	289	291	291	294	297	294
303	299	298	292	294	296	297	298	296	298	299	301	301
297	295	294	295	297	297	298	297	295	297	298	297	299
311	310	307	306	304	306	305	305	305	305	309	309	306
308	307	313	310	307	303	303	299	305	306	304	305	310
(312)	(314)	(313)	(314)	315	297	277	269	274	285	292	292	302
275	280	287	290	288	291	292	292	296	297	296	300	294
301	299	301	306	307	308	306	304	304	305	304	308	303
302	307	(301)	(298)	(299)	(301)	(300)	(300)	(298)	(299)	(299)	(297)	304
298	302	...	...	...	...	...	...	...	...	...	...	...
...
...
300	276	257	261	265	269	275	275	275	276	277	279	302
297	300	299	297	291	288	274	283	292	296	294	296	296
302	303	301	292	272	283	288	291	294	292	295	298	296
292	297	298	298	297	299	302	302	311	299	305	303	301
297	295	293	293	293	292	291	290	291	292	293	294	297
298	294	293	293	295	293	292	292	292	293	295	296	297

29000 γ , PLUS TABULAR QUANTITIES.

311	306	298	305	299	296	303	298	301	301	302	302	304
298	298	293	288	294	296	300	297	296	297	298	299	300
313	312	312	308	303	305	306	305	307	307	308	(311)	307
304	308	305	311	320	317	311	302	292	287	286	279	307
299	298	306	305	300	299	297	293	277	293	299	299	302
297	300	300	294	296	291	294	302	297	294	302	299	300
297	299	289	286	290	288	286	288	292	294	292	295	298
302	299	298	296	295	287	291	296	297	296	295	299	299
305	299	294	291	293	290	299	288	287	299	296	301	299
302	297	294	295	294	291	292	295	294	296	298	298	301
293	285	277	280	286	295	297	295	296	297	299	301	300
307	303	298	292	287	297	296	297	300	296	295	295	301
307	295	292	294	295	298	296	295	292	291	293	294	304
302	307	307	304	298	297	295	292	295	291	305	288	299
310	308	308	302	297	301	304	303	304	301	303	309	303
308	300	295	288	288	292	289	282	287	292	291	291	300
288	288	294	297	296	300	302	304	302	301	299	302	300
311	310	305	296	296	295	294	295	295	294	293	297	302
310	307	305	302	301	299	299	299	299	300	303	305	304
302	302	302	298	298	300	302	302	300	301	301	301	302
308	306	301	301	302	305	304	302	304	300	299	299	306
295	291	295	298	301	301	305	304	304	305	305	308	304
312	301	299	303	306	306	309	301	298	294	294	298	310
312	312	310	310	306	310	307	310	310	308	308	308	308
324	318	313	304	297	302	302	300	299	296	297	299	313
309	306	306	304	300	302	298	295	296	298	299	299	305
(314)	310	307	307	307	309	311	310	310	310	308	310	310
316	314	312	306	304	303	303	303	305	304	303	303	311
300	299	298	296	294	289	291	294	297	296	298	301	301
305	303	300	299	298	299	299	298	298	298	299	300	303
306	304	301	298	297	296	297	298	298	298	299	300	303

Interpolated values are in parentheses.

MARCH, 1904.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	298	300	304	305	304	305	309	317	323	325	328	328
2.....	306	304	305	302	304	309	312	317	318	319	318	312
3.....	310	314	311	312	316	315	325	327	330	332	333	330
4.....	299	291	299	300	294	291	298	303	310	305	274	300
5.....	300	294	305	307	302	295	303	303	303	305	305	304
6*.....	302	304	304	304	304	306	307	311	313	311	311	305
7.....	303	301	303	304	304	305	309	313	313	312	311	311
8*.....	306	304	304	306	306	305	305	308	311	314	316	316
9.....	303	301	302	303	306	307	311	314	318	320	321	318
10*.....	304	303	303	306	306	307	313	315	318	317	319	317
11.....	298	305	308	311	313	314	323	331	336	333	328	326
12.....	308	303	303	310	312	320	319	322	318	317	316	313
13*.....	303	304	305	305	309	309	311	312	316	314	316	316
14.....	304	310	311	313	316	317	319	323	325	324	328	327
15*.....	308	307	307	308	312	313	316	316	314	312	314	317
16*.....	309	309	310	308	312	312	316	319	324	323	321	318
17.....	312	310	311	313	315	313	314	312	310	311	312	317
18*.....	310	312	310	313	314	313	314	316	320	320	325	328
19.....	311	313	314	316	317	315	319	324	330	340	350	361
20.....	312	313	315	319	321	322	324	326	325	328	334	329
21*.....	312	312	311	309	310	309	313	320	326	329	329	324
22*.....	308	310	309	311	314	315	317	320	323	325	326	327
23.....	315	318	(319)	(321)	(320)	(322)	(326)	(329)	(329)	(328)	327	328
24.....	317	319	319	321	322	(321)	(321)	324	(328)	(328)	(328)	(326)
25.....	308	311	317	319	322	325	333	340	342	344	342	339
26.....	317	308	(309)	(313)	(314)	(315)	(317)	(320)	322	315	323	317
27.....	300	301	305	312	311	312	315	318	316	317	317	316
28*.....	304	304	304	305	310	308	313	313	314	317	317	315
29.....	311	312	313	312	312	311	310	311	309	300	306	307
30.....	307	307	308	314	314	315	312	310	309	311	314	314
31.....	307	308	308	309	309	308	307	306	309	319	327	337
Mean.....	307	307	308	310	311	312	315	317	319	320	321	321
Mean*.....	307	307	307	308	310	310	312	315	318	318	319	318

APRIL, 1904.

1.....	296	271	284	281	297	276	271	263	260	263	260	262
2.....	266	265	279	277	278	276	282	279	282	281	283	295
3.....	277	283	285	283	280	284	284	282	281	281	279	283
4.....	278	283	286	285	287	289	287	291	287	283	276	277
5*.....	288	288	292	293	295	294	301	303	306	308	309	310
6.....	288	288	292	(295)	(298)	(299)	(304)	308	310	310	308	305
7.....	299	301	299	298	296	297	298	302	306	302	306	304
8.....	282	288	290	293	295	298	302	304	302	307	309	310
9*.....	294	295	297	299	301	301	301	301	300	305	311	307
10.....	300	303	305	304	304	303	306	307	314	320	325	327
11.....	289	293	294	298	301	303	305	309	311	319	317	306
12*.....	295	294	296	298	301	300	304	306	307	307	301	300
13*.....	299	296	298	305	304	309	311	310	315	314	309	310
14*.....	302	302	304	306	306	306	307	305	308	307	306	309
15*.....	302	306	309	308	310	312	306	309	311	313	315	322
16.....	305	304	306	307	308	308	306	304	301	303	309	317
17.....	308	311	310	310	310	312	313	319	319	319	319	329
18.....	324	313	309	303	307	316	316	317	313	313	315	311
19.....	257	262	269	273	283	290	299	291	288	285	281	287
20.....	290	291	291	294	297	298	301	299	300	300	300	301
21*.....	300	301	302	304	303	304	307	313	317	322	325	324
22*.....	297	301	300	303	303	307	309	315	320	321	316	311
23.....	299	299	301	302	302	302	303	306	310	310	308	309
24.....	305	310	311	300	300	301	307	315	324	324	321	(320)
25.....	304	309	311	314	315	313	315	323	332	333	329	322
26.....	283	284	302	300	297	293	301	298	305	306	302	297
27.....	295	297	299	299	299	299	302	307	316	321	317	312
28*.....	299	303	303	305	305	306	306	308	314	317	317	313
29*.....	302	304	302	305	307	307	309	312	318	315	311	304
30.....	299	300	301	301	304	304	304	304	304	299	296	298
Mean.....	294	295	298	298	300	300	302	304	306	307	306	306
Mean*.....	298	299	300	303	304	305	306	308	312	313	312	311

*The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

29000 r , PLUS TABULAR QUANTITIES.

18 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
r	r	r	r	r	r	r	r	r	r	r	r	r
330	320	309	313	308	305	304	304	306	305	306	309	311
308	312	335	300	293	295	304	307	311	308	308	307	309
325	316	311	313	307	307	294	299	297	275	280	284	311
310	309	306	302	297	297	298	300	304	293	292	288	298
299	298	298	305	315	299	300	300	299	300	301	302	302
304	302	298	300	299	299	300	297	296	295	298	300	303
306	298	294	301	306	306	306	306	305	307	306	307	306
311	308	304	304	302	303	304	304	305	304	304	303	307
319	307	301	296	300	298	295	293	295	300	299	297	305
312	308	300	300	308	310	307	309	306	300	296	303	308
313	311	308	305	302	309	309	309	304	299	298	300	312
311	307	304	307	298	300	300	303	303	303	301	304	308
315	312	308	302	300	303	300	305	305	309	306	305	308
326	324	322	317	310	309	308	309	309	308	309	309	316
318	314	314	310	309	310	310	312	314	315	314	314	312
317	318	316	314	311	311	314	313	312	312	312	312	314
319	318	314	309	303	303	304	305	305	307	309	310	311
328	324	317	313	309	311	310	308	308	309	310	311	315
351	338	327	319	311	310	311	309	309	311	313	312	322
324	319	315	312	308	306	309	303	306	307	307	311	316
318	313	310	308	308	305	307	308	307	307	308	311	313
324	321	314	313	307	308	306	306	306	309	310	310	314
329	327	319	316	315	312	310	316	315	315	317	316	320
(320)	(318)	(318)	(316)	314	312	313	312	309	307	306	309	318
333	325	322	322	321	323	325	326	324	328	322	322	326
319	315	301	293	295	304	305	308	308	303	304	304	310
315	315	310	310	307	306	304	304	305	305	305	305	310
311	306	306	308	308	311	310	310	309	307	310	308	310
309	313	314	301	298	299	298	300	302	301	307	305	307
315	315	312	313	298	302	310	311	312	306	311	308	310
338	330	319	315	315	314	316	318	298	301	275	286	312
319	315	311	308	306	306	306	307	306	305	305	306	311
316	313	309	307	306	307	307	307	307	307	307	308	310

29000 r , PLUS TABULAR QUANTITIES.

262	264	255	251	249	245	244	249	264	272	276	262	266
301	295	285	272	264	262	274	276	274	270	284	282	278
276	271	275	280	274	261	273	270	269	278	285	276	278
283	284	283	287	288	285	284	287	295	291	287	282	285
311	302	300	293	293	293	292	293	288	284	286	288	296
308	307	300	299	300	301	301	302	300	300	299	299	301
299	299	294	287	278	269	288	266	265	270	274	276	290
304	301	296	290	288	286	285	288	294	297	302	295	296
305	297	301	302	301	310	296	289	287	291	300	301	300
324	323	315	313	304	293	282	268	270	281	283	282	302
299	301	297	291	285	292	293	294	292	293	293	293	299
301	304	303	302	299	302	301	300	297	298	300	299	301
310	310	306	300	298	299	301	302	302	300	300	300	304
313	308	306	305	304	300	299	300	302	300	305	301	305
318	319	315	311	305	305	307	305	304	302	303	303	309
324	328	324	317	312	309	309	308	306	306	308	306	310
346	342	333	303	295	299	302	305	306	306	305	303	314
308	307	288	270	252	237	225	224	237	236	241	248	285
287	280	277	274	275	281	278	281	279	282	283	284	280
308	311	310	304	302	299	298	300	297	296	298	298	299
316	310	305	301	293	292	289	291	293	296	297	296	304
309	305	303	302	296	290	291	293	292	292	294	296	303
310	305	303	304	304	304	305	303	307	304	305	306	305
(319)	(314)	(311)	(308)	301	304	301	303	300	303	301	301	308
317	316	311	302	297	293	294	292	292	289	285	287	308
292	288	285	285	286	289	291	292	295	296	295	294	294
306	303	295	295	295	294	300	300	300	300	299	297	302
311	307	303	301	299	299	297	298	298	300	301	302	305
303	307	304	299	295	293	290	295	294	292	299	301	303
303	299	293	290	(285)	(285)	285	285	290	288	287	277	295
306	304	299	295	291	289	288	289	290	290	292	291	297
310	307	305	302	298	298	296	297	296	296	298	299	303

Interpolated values are in parentheses.

MAY, 1904.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	281	286	290	297	293	292	300	304	297	295	295	289
2.....	294	291	293	299	296	300	307	312	313	314	317	319
3*.....	(302)	(301)	(303)	(303)	(304)	(305)	(306)	(306)	308	307	306	304
4.....	299	301	301	303	303	307	303	301	305	304	300	299
5*.....	301	303	307	306	309	315	318	321	323	319	316	314
6.....	301	303	308	309	309	308	306	311	315	318	318	310
7*.....	300	301	302	303	304	306	303	305	310	313	314	312
8.....	305	304	307	308	310	320	322	324	331	327	326	319
9*.....	309	310	312	313	314	312	312	312	320	321	323	325
10*.....	314	314	318	317	318	316	313	309	316	323	325	323
11.....	309	308	311	310	311	313	314	323	333	338	334	330
12.....	328	320	325	327	318	320	308	312	315	317	307	297
13.....	278	283	285	285	285	282	268	269	270	269	265	265
14.....	280	284	283	277	277	281	277	278	275	275	284	293
15.....	284	278	278	280	280	282	282	282	281	290	294	295
16*.....	293	291	293	294	292	296	292	295	302	308	310	311
17.....	296	296	297	302	299	292	297	305	308	308	305	315
18.....	295	293	294	294	296	296	299	297	294	287	289	291
19.....	299	298	293	295	294	297	302	300	301	304	308	306
20*.....	292	295	295	296	295	300	296	299	294	296	295	298
21*.....	297	297	298	302	300	303	304	303	304	305	306	307
22*.....	299	301	304	303	302	305	305	309	307	302	306	310
23.....	299	299	301	300	301	303	306	311	316	314	314	308
24.....	(301)	(301)	(302)	(301)	(303)	(303)	(304)	(304)	(306)	307	309	310
25.....	296	294	295	295	299	300	305	311	320	321	322	318
26.....	305	305	(309)	(311)	(314)	(317)	(320)	322	329	332	334	329
27.....	313	308	306	307	311	311	308	314	329	342	343	348
28.....	285	286	300	302	287	296	296	287	284	291	285	280
29*.....	296	295	294	291	289	293	292	290	296	303	308	304
30.....	293	298	298	299	297	299	301	297	302	314	321	317
31.....	292	292	294	295	293	296	298	301	304	309	310	305
Mean.....	298	298	300	301	300	302	302	304	307	309	309	308
Mean*.....	300	301	303	303	303	305	304	305	308	310	311	311

JUNE, 1904.

1.....	303	303	303	303	302	304	305	305	310	306	309	314
2*.....	300	300	301	304	305	306	304	302	305	312	311	309
3.....	304	304	303	302	302	306	311	316	323	324	314	305
4.....	306	306	306	307	309	310	312	312	314	316	315	315
5.....	305	307	308	310	312	317	325	330	337	340	338	333
6.....	319	323	329	328	333	333	327	340	336	338	339	344
7.....	298	301	304	305	309	317	316	319	324	320	316	308
8.....	300	301	305	305	306	308	309	312	313	308	311	317
9*.....	306	307	307	313	311	313	315	319	322	326	325	321
10.....	306	305	310	309	309	310	313	323	334	340	338	327
11*.....	298	306	302	298	299	303	301	305	312	317	318	316
12.....	302	302	303	303	304	(304)	(302)	(302)	304	311	313	310
13*.....	302	303	304	304	304	304	299	296	305	313	320	319
14*.....	304	306	308	310	312	312	307	305	308	315	318	323
15.....	309	310	308	306	304	300	300	302	299	294	291	304
16.....	255	267	285	276	282	275	279	279	281	293	284	288
17.....	267	269	273	274	279	281	287	285	285	285	277	277
18.....	295	296	289	289	288	289	287	285	292	302	305	305
19*.....	290	291	293	293	293	294	292	292	300	306	304	299
20.....	291	292	294	296	295	295	293	302	303	308	308	305
21*.....	294	290	290	293	294	298	296	300	301	301	305	302
22.....	295	295	296	297	298	297	298	300	303	313	317	315
23*.....	298	300	301	302	301	305	306	307	316	324	330	324
24*.....	300	302	301	301	300	301	299	302	307	317	315	315
25.....	304	305	306	306	304	307	302	299	309	310	312	309
26.....	289	292	294	297	299	306	310	318	329	343	348	345
27.....	299	294	299	296	296	304	295	290	289	301	311	307
28.....	295	296	296	(299)	(300)	(304)	(305)	(308)	(312)	(315)	318	312
29.....	290	290	291	291	292	294	292	297	302	307	307	310
30*.....	302	302	304	303	303	304	301	299	306	317	322	317
Mean.....	298	299	300	301	302	303	303	305	309	314	315	313
Mean*.....	299	301	301	302	302	304	302	303	308	315	317	314

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

29000 r , PLUS TABULAR QUANTITIES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
r	r	r	r	r	r	r	r	r	r	r	r	r
284	286	289	285	278	278	281	279	286	288	289	289	289
318	317	311	297	287	290	294	294	293	294	302	(301)	302
302	299	292	286	283	284	288	294	294	295	298	298	299
301	304	301	300	296	(295)	(293)	(293)	295	294	297	298	300
311	307	307	303	303	303	303	303	300	300	301	301	308
302	296	295	295	294	301	298	299	299	297	298	298	304
309	309	308	304	299	297	299	297	298	299	299	299	304
315	309	308	310	312	314	312	313	313	313	313	313	314
321	318	316	316	311	308	310	312	313	313	313	312	314
321	312	306	306	308	310	310	311	310	307	309	309	314
327	319	307	302	303	305	304	304	306	311	312	311	314
292	290	298	287	285	278	273	274	277	270	291	282	300
263	253	248	245	245	243	254	250	267	273	277	273	267
295	294	284	282	282	283	280	278	277	288	279	284	282
290	299	294	291	286	286	287	288	290	290	291	293	288
301	300	299	297	293	294	293	293	297	295	298	300	297
315	312	305	291	284	281	290	287	286	291	293	296	298
294	297	300	300	294	294	293	292	292	291	296	295	294
314	307	302	297	294	291	291	289	288	288	289	292	297
298	298	297	295	292	292	292	291	290	292	293	294	295
304	304	298	291	289	290	295	296	297	296	296	297	299
305	303	297	291	289	291	292	298	299	300	298	297	301
303	299	294	292	294	298	301	(300)	(300)	(299)	(300)	(298)	302
305	302	297	291	287	287	289	290	289	287	289	296	298
311	308	306	304	304	303	304	303	305	303	304	306	306
326	318	310	303	300	300	307	312	312	314	315	313	315
331	320	314	301	286	277	277	262	268	273	266	269	304
270	268	269	267	274	274	277	282	284	291	291	294	284
299	298	298	292	284	284	283	286	284	290	290	291	293
315	303	296	290	289	289	290	285	290	289	298	294	298
309	314	309	304	294	295	294	297	300	300	300	303	300
305	302	299	294	291	291	292	292	294	295	296	297	299
307	305	302	298	295	295	296	298	298	299	300	300	302

29000 r , PLUS TABULAR QUANTITIES.

316	319	310	304	298	297	297	296	304	298	298	302	304
303	298	294	293	294	297	300	301	302	302	302	304	302
298	294	291	292	296	299	301	302	301	301	303	305	304
313	310	305	302	303	303	315	314	315	313	303	301	309
327	318	310	303	302	305	307	308	305	305	303	303	315
343	322	317	308	304	299	299	298	298	297	306	303	320
304	299	290	291	291	296	300	299	302	301	301	302	305
318	314	306	301	300	304	304	304	306	305	306	307	307
315	313	307	303	300	303	303	303	304	303	307	306	310
313	306	304	298	302	308	306	302	300	295	298	297	311
313	307	299	294	294	297	297	297	299	301	301	303	303
306	301	296	290	289	294	297	300	299	300	299	302	301
317	314	311	304	300	298	299	300	302	301	303	303	305
325	319	316	315	305	299	300	305	304	302	304	304	309
305	299	299	283	287	290	268	218	235	242	260	261	286
290	292	287	273	258	262	267	268	270	264	269	269	276
278	276	275	278	278	280	278	282	281	284	285	284	279
299	290	281	279	283	283	282	280	281	282	289	288	289
291	289	284	282	283	283	285	283	283	284	284	289	290
297	295	285	283	286	291	291	291	287	287	281	294	294
297	295	292	287	287	287	292	292	293	297	296	296	295
311	303	292	287	291	296	296	296	298	298	299	300	300
317	320	315	307	303	299	300	298	295	294	298	300	307
308	304	297	295	294	297	298	299	300	302	301	303	302
310	304	294	294	291	286	290	289	288	292	293	291	300
342	322	315	304	302	299	299	303	303	308	301	291	311
307	296	285	282	280	280	284	287	292	296	290	292	294
310	308	301	289	285	286	286	285	287	286	287	288	298
312	309	302	295	294	292	295	295	296	297	297	299	298
310	308	302	299	300	301	301	302	301	302	303	305	305
310	305	299	294	293	294	295	293	294	295	296	296	301
310	307	302	298	296	296	298	298	298	299	300	301	303

Interpolated values are in parentheses.

PORTO RICO MAGNETIC OBSERVATORY.

JULY, 1904.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	307	308	308	308	312	315	324	325	330	339	336	332
2.....	302	304	305	306	305	308	305	303	311	319	322	315
3*.....	303	305	307	307	310	314	312	314	314	316	317	310
4*.....	302	302	304	303	303	306	305	308	308	310	311	314
5.....	292	293	297	297	296	300	305	305	301	309	316	320
6.....	304	305	312	323	324	322	333	335	338	336	335	315
7.....	284	284	283	282	281	281	281	284	290	293	296	295
8.....	289	288	289	292	292	293	297	299	301	299	305	303
9.....	304	300	301	297	296	303	308	311	315	319	319	311
10.....	294	292	295	294	295	297	294	289	294	303	307	306
11.....	291	292	292	294	295	300	304	301	302	305	312	311
12*.....	302	303	301	303	307	309	312	315	312	313	311	305
13.....	303	303	305	305	305	311	318	322	325	332	331	340
14.....	300	303	313	326	312	315	316	333	337	338	328	323
15.....	301	298	297	298	298	300	302	303	309	313	315	310
16.....	289	293	292	294	296	298	299	306	311	314	320	320
17*.....	301	305	306	314	307	307	312	313	323	328	326	317
18.....	302	298	(300)	(300)	(301)	(303)	(304)	306	306	302	301	296
19.....	301	300	302	304	(307)	(311)	(312)	(318)	325	331	328	316
20*.....	300	302	308	312	313	309	310	307	315	327	327	322
21*.....	306	306	306	306	306	312	316	315	319	322	319	318
22*.....	306	308	310	311	314	313	314	320	331	338	341	335
23*.....	304	303	304	306	308	313	321	324	324	325	322	313
24.....	297	298	298	299	299	303	300	297	300	304	306	304
25*.....	303	305	301	301	302	306	309	313	330	331	328	325
26.....	306	306	305	307	306	307	311	316	326	331	333	326
27.....	309	308	301	296	299	302	302	303	311	314	313	314
28.....	306	306	304	300	305	311	316	323	332	332	329	320
29*.....	310	309	305	304	304	304	307	308	319	324	324	318
30.....	306	309	312	309	309	308	307	311	321	322	318	316
31.....	295	296	299	300	301	306	317	324	337	348	344	331
Mean.....	301	301	302	303	303	306	309	311	317	321	321	316
Mean*.....	304	305	305	307	307	309	312	314	320	323	323	318

AUGUST, 1904.

1.....	296	296	295	298	299	300	302	310	324	330	331	322
2.....	293	312	307	307	309	309	312	318	324	326	326	319
3.....	293	297	302	304	307	311	317	322	325	333	327	308
4.....	278	275	278	285	293	293	296	303	310	312	311	305
5*.....	285	288	286	288	289	290	295	297	302	312	311	309
6.....	293	295	300	298	296	296	293	306	331	341	338	335
7*.....	290	290	293	292	293	297	298	303	307	315	317	316
8*.....	296	295	296	296	299	301	302	310	313	313	305	302
9.....	297	300	301	303	303	303	298	296	303	315	315	317
10*.....	307	303	302	304	305	306	306	309	315	320	313	309
11.....	305	304	305	309	309	311	309	314	325	336	343	345
12.....	312	313	313	311	310	307	303	312	326	338	340	342
13.....	316	313	314	311	308	307	304	310	324	336	346	345
14*.....	300	300	300	298	298	298	297	306	318	320	319	315
15*.....	307	307	310	311	310	310	312	318	332	337	332	319
16.....	302	308	305	307	307	310	313	314	316	319	314	314
17.....	298	302	302	303	304	309	312	314	317	312	303	301
18*.....	305	302	302	303	306	309	312	314	317	315	315	312
19*.....	296	297	295	296	297	301	300	305	310	317	317	314
20.....	296	297	299	299	297	299	299	305	311	315	311	304
21.....	307	306	305	307	311	314	315	317	321	319	319	314
22*.....	290	291	285	292	292	296	298	302	307	308	306	301
23*.....	291	292	(292)	(292)	(293)	(293)	293	295	302	308	312	310
24.....	298	300	304	302	302	304	302	305	307	305	305	304
25.....	...	...	...	...	...	...	...	...	...	...	...	...
26.....	...	...	...	...	...	...	...	...	...	...	...	...
27.....	...	...	...	...	...	...	...	...	...	...	...	...
28.....	...	...	...	...	...	...	...	...	...	...	...	...
29.....	...	...	...	...	...	...	...	...	...	...	...	...
30.....	...	...	...	...	...	...	...	...	...	...	...	...
31.....	...	...	...	...	...	...	...	...	...	...	...	...
Mean.....	298	299	300	300	302	303	304	309	317	322	320	316
Mean*.....	297	296	297	296	298	300	301	306	312	316	315	311

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

18 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
328	338	337	328	318	309	307	301	300	301	302	303	317
314	316	316	314	306	306	306	305	303	300	305	303	308
306	302	296	293	292	294	298	297	297	297	299	301	304
311	309	303	299	299	298	297	298	296	296	296	291	303
322	318	306	299	295	295	298	300	300	300	299	301	303
307	317	310	290	260	244	239	246	250	265	264	274	298
296	303	302	293	283	289	288	287	284	290	283	294	289
308	308	303	299	299	296	297	303	301	301	300	306	299
307	299	289	288	284	281	288	288	281	286	287	297	298
300	299	292	284	281	283	290	292	290	292	292	293	294
310	306	304	300	294	293	294	296	297	297	300	301	300
301	297	298	291	289	291	293	295	298	299	299	300	302
328	329	324	310	300	296	295	296	298	298	298	298	311
320	321	309	295	284	277	278	291	292	292	296	294	308
302	296	291	287	278	278	275	271	268	265	274	282	292
311	311	304	294	289	283	285	292	294	296	299	303	300
304	300	297	297	297	295	294	294	295	294	296	295	305
295	292	286	286	290	295	298	299	298	297	297	298	298
309	303	295	294	291	296	300	300	303	302	301	301	306
312	308	302	297	297	301	303	304	305	308	310	310	309
315	313	306	300	295	300	303	305	305	301	303	305	308
(329)	(320)	(312)	(303)	302	306	309	310	310	310	311	308	315
311	304	300	322	299	296	296	297	299	298	299	301	308
299	296	292	292	290	291	294	297	298	301	303	303	298
325	317	306	301	297	298	300	301	301	305	306	306	309
316	301	299	295	299	302	308	300	298	303	309	309	309
311	306	300	300	296	294	293	297	299	298	308	311	304
314	313	307	301	301	299	302	303	301	309	310	312	311
313	307	301	298	295	296	297	298	299	301	303	309	306
303	293	287	295	298	295	298	290	283	279	290	295	302
315	306	299	294	286	285	284	286	291	293	294	294	305
311	308	302	298	293	292	294	295	295	296	298	300	304
313	308	302	300	296	298	299	300	300	301	302	303	307

319	312	303	298	299	304	304	306	310	301	313	308	308
312	305	297	288	282	283	283	284	284	285	288	286	302
314	300	294	287	278	291	298	282	256	260	273	278	298
295	285	278	270	261	263	265	271	273	285	281	284	285
306	299	290	280	279	281	285	287	286	285	284	290	292
325	316	310	299	289	289	291	291	294	294	295	294	305
311	304	297	295	293	293	294	296	296	296	294	295	299
297	298	293	291	289	286	289	293	296	298	296	296	298
314	307	300	297	300	302	307	306	310	311	309	306	305
302	300	301	295	291	294	299	300	303	302	305	306	304
337	330	321	309	301	302	304	306	308	310	310	313	315
335	330	321	313	310	310	313	312	312	313	316	317	318
343	330	319	306	298	296	295	294	295	296	297	297	313
309	301	298	299	298	297	296	298	299	302	303	305	303
316	315	312	309	303	304	298	295	293	305	300	301	311
311	308	304	301	299	300	295	289	291	289	290	297	304
298	297	293	293	292	292	315	304	301	304	303	301	303
301	291	294	294	291	291	288	291	291	295	296	298	301
308	297	289	287	286	288	288	289	291	292	293	294	298
299	297	298	300	299	303	305	303	303	301	303	303	302
307	300	300	295	278	281	294	295	289	284	310	292	303
297	293	292	280	282	285	285	290	287	291	288	298	293
315	311	300	293	286	287	294	295	295	298	299	298	298
304	299	299	300	297	301	304	304	305	305
...
...
...
...
...
...
...
312	305	300	295	291	292	295	295	294	296	298	298	302
306	301	297	292	290	291	292	293	294	296	296	297	300

68826-09-5

SEPTEMBER, 1904.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	322	317	316	315	310	306	303	302	299	298	297	295
2.....	287	285	288	286	290	287	289	295	298	301	304	299
3.....	281	281	276	274	272	280	286	289	294	302	302	297
4.....	291	293	294	295	296	298	294	300	297	297	293	286
6.....	280	281	279	280	283	283	280	285	296	300	301	296
7.....	294	289	288	289	291	291	283	271	267	268	273	276
8*.....	272	280	281	287	287	291	283	281	279	279	283	280
9.....	274	276	281	285	286	274	272	268	267	269	276	277
10.....	276	277	283	282	278	281	282	278	280	284	288	284
11.....	286	283	287	287	283	280	276	271	276	287	291	291
12*.....	277	281	282	283	285	284	282	281	274	273	280	281
13*.....	276	275	277	279	279	278	277	279	282	286	291	289
14*.....	276	278	278	281	281	280	282	284	285	286	290	287
15.....	284	287	290	292	296	297	304	309	309	309	314	307
16.....	293	295	304	307	282	283	285	289	293	295	293	297
17*.....	278	281	280	281	280	280	282	279	279	283	286	287
18*.....	284	285	283	283	284	283	278	276	276	278	280	282
19*.....	288	288	289	290	289	288	288	290	294	296	299	298
20.....	287	286	288	288	290	291	295	296	292	290	291	290
21.....	298	298	(296)	(293)	(290)	(290)	(288)	288	288	285	286	286
22*.....	294	295	296	299	299	294	293	290	285	283	286	291
23.....	277	276	283	285	285	290	281	279	280	289	298	305
24.....	284	285	286	286	285	285	276	276	276	279	285	292
25.....	264	260	267	(264)	(262)	(261)	(257)	(255)	260	255	245	246
26.....	253	255	257	259	265	266	266	259	257	256	259	266
27.....	269	269	269	269	267	265	262	256	252	253	256	258
28.....	271	274	275	278	280	280	279	277	272	269	271	269
29*.....	281	282	282	282	284	283	285	289	294	297	301	296
30*.....	278	278	279	282	282	281	279	278	280	283	287	286
Mean.....	282	282	284	285	284	284	282	282	282	284	286	286
Mean *.....	280	282	283	285	285	284	283	283	283	284	288	288

OCTOBER, 1904.

1.....	...	...	...	...	...	...	...	...	...	...	...	...
2.....	...	...	...	...	...	...	...	...	...	...	...	...
3*.....	273	275	278	279	278	278	277	279	282	285	284	282
4*.....	274	274	275	274	276	276	276	276	280	283	286	286
5.....	277	270	269	271	274	274	273	269	272	280	284	284
6.....	269	274	275	280	279	279	283	288	294	295	303	302
7.....	252	254	258	259	277	268	273	276	272	269	271	268
8.....	263	267	266	267	264	267	267	269	268	272	265	268
9.....	273	273	272	270	266	264	267	267	266	271	278	279
10*.....	277	278	276	276	274	274	272	274	276	279	283	284
11*.....	279	276	278	278	277	276	275	277	280	280	280	282
12.....	279	278	280	282	279	278	278	275	273	267	260	264
13.....	280	283	286	284	288	292	295	297	302	302	304	308
14.....	264	273	275	278	283	288	292	293	292	294	291	301
15*.....	268	268	270	271	273	275	276	280	281	284	283	284
16.....	272	272	271	274	277	279	283	289	287	287	280	276
17*.....	277	278	278	279	281	281	280	274	271	276	274	273
18*.....	274	275	277	279	278	274	273	279	282	281	278	277
19*.....	275	275	281	279	279	277	277	278	279	280	285	289
20.....	276	276	278	280	278	277	278	283	289	298	305	300
21.....	270	279	278	271	276	275	276	281	283	280	268	258
22.....	248	250	253	262	264	262	264	267	272	276	279	272
23*.....	255	259	259	259	259	257	256	258	262	263	264	258
24*.....	262	264	265	266	266	267	268	272	271	267	263	266
25.....	266	266	268	272	275	280	289	294	297	295	301	303
26.....	267	270	270	273	270	268	272	275	280	281	278	274
27.....	265	266	269	273	274	273	281	291	(287)	(286)	(284)	(283)
28.....	269	277	283	281	282	288	291	296	295	290	277	277
29.....	278	278	278	281	281	283	291	300	300	303	301	302
30.....	272	278	280	279	277	276	283	285	289	287	284	280
31.....	266	266	269	274	281	277	283	289	288	291	289	281
Mean.....	270	271	273	274	275	275	278	280	282	283	282	281
Mean *.....	271	272	274	274	274	274	273	275	276	278	278	278

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

29000 r , PLUS TABULAR QUANTITIES.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
r	r	r	r	r	r	r	r	r	r	r	r	r
292	290	286	289	287	285	281	280	277	277	278	283	295
291	288	280	275	270	270	270	270	270	273	281	281	284
290	291	284	279	280	282	286	288	288	287	288	290	286
282	273	265	257	258	268	274	281	284	282	281	275	284
287	280	272	274	282	286	284	285	285	288	289	293	285
275	276	278	276	283	287	287	287	282	287	273	270	281
280	280	277	268	266	272	273	275	275	274	276	277	278
274	270	268	265	267	270	267	265	269	278	279	276	273
289	286	280	279	277	278	276	277	277	282	284	283	281
277	275	268	265	260	264	266	263	270	272	276	275	276
276	270	273	270	268	270	268	269	273	275	275	274	276
284	278	279	278	276	276	276	275	274	273	275	277	279
284	281	277	279	279	280	284	287	285	284	282	283	282
303	295	285	281	283	284	285	285	286	286	288	290	294
292	285	279	282	275	282	284	281	283	282	283	280	288
289	285	280	282	281	284	286	283	282	283	282	284	282
281	283	282	281	283	287	287	287	287	283	285	286	283
295	292	288	286	287	288	290	291	290	289	288	286	290
290	282	281	284	289	294	296	298	299	298	300	299	291
280	276	273	279	282	285	283	285	288	289	290	292	287
292	289	291	291	290	288	287	286	285	285	283	280	290
304	297	288	290	289	288	289	288	287	287	286	284	288
293	290	286	284	271	270	253	255	233	232	254	256	274
242	239	230	236	236	244	252	258	260	260	255	261	253
271	268	267	268	269	269	272	272	273	272	270	268	265
258	259	261	269	275	278	279	277	273	272	271	267	266
267	263	264	268	271	275	276	276	275	275	276	279	273
291	290	284	285	286	286	291	290	286	281	278	281	287
281	276	275	275	270	270	269	270	273	275	275	275	277
283	280	276	276	276	278	278	279	278	279	279	279	281
285	282	281	280	279	280	281	281	281	280	280	280	282

29000 r , PLUS TABULAR QUANTITIES.

...	...	...	273	271	275	276	274	274	273	272	272	...
280	271	268	268	271	274	274	275	275	276	272	272	276
283	276	271	269	271	273	274	272	272	271	272	268	275
279	272	265	263	266	272	271	266	261	271	274	278	272
300	297	289	290	287	289	290	294	295	286	267	255	286
262	256	249	251	246	243	247	262	246	255	278	272	261
259	246	260	258	257	260	259	268	267	266	269	273	264
272	270	262	258	262	268	273	274	275	279	275	274	270
283	277	273	272	272	278	281	283	281	279	279	276	277
282	280	277	277	275	274	275	277	275	277	277	277	278
266	266	268	271	269	274	275	275	279	278	278	279	274
297	284	274	268	249	247	240	236	235	238	246	255	275
300	294	279	264	270	274	266	262	258	268	265	266	279
277	270	263	260	271	277	280	278	274	265	265	269	273
270	269	270	272	274	279	280	282	281	282	281	280	278
269	265	269	273	275	277	276	275	275	273	275	274	275
273	265	267	273	276	276	272	270	269	269	273	276	274
287	272	272	275	277	277	273	273	274	273	274	276	277
293	290	291	289	283	285	280	270	266	274	274	270	283
237	231	232	221	(224)	(229)	(232)	(236)	(240)	244	244	245	255
265	260	256	260	254	252	252	251	248	256	265	259	260
254	253	255	258	258	257	254	254	254	255	255	259	257
266	266	263	259	260	261	259	260	259	260	264	265	264
293	288	281	267	262	262	261	259	259	263	263	267	276
268	267	272	274	278	275	276	274	273	275	271	266	273
(279)	272	274	275	274	278	272	273	280	282	282	273	277
278	277	277	267	267	269	272	273	271	271	274	276	278
298	292	280	272	267	268	269	269	267	271	272	271	282
273	269	266	267	268	266	258	260	261	259	259	261	272
274	265	257	261	259	260	260	260	258	256	254	256	270
276	271	268	267	266	268	267	268	266	268	269	269	273
275	270	268	268	271	272	272	272	271	270	271	271	273

Interpolated values are in parentheses.

NOVEMBER, 1904.

Day.	1 ^h	2 ^h	3 ^h	4 ^h	5 ^h	6 ^h	7 ^h	8 ^h	9 ^h	10 ^h	11 ^h	Noon.
1.....	257	261	267	270	272	273	280	288	288	282	278	271
2.....	278	277	279	279	280	283	288	301	289	291	292	287
3.....	271	274	277	278	280	284	290	296	310	308	308	302
4.....	282	288	283	278	287	285	291	287	274	271	266	258
5.....	257	259	265	266	267	267	283	283	270	259	264	256
6.....	259	258	260	263	266	267	276	278	278	278	277	275
7*.....	270	269	272	270	270	273	282	283	285	286	285	279
8.....	269	268	270	271	272	272	279	282	281	274	272	268
9*.....	277	276	276	277	278	281	287	291	293	289	288	283
10*.....	279	279	280	279	280	282	284	285	286	285	288	290
11*.....	280	282	282	283	282	284	289	292	294	294	297	296
12*.....	277	277	278	280	280	280	283	283	285	287	284	276
13*.....	275	276	278	278	280	281	283	286	286	289	288	283
14*.....	278	278	280	281	282	284	289	291	289	287	284	276
15.....	279	278	280	281	281	283	289	294	294	294	293	285
16.....	251	247	241	245	250	252	271	280	283	280	255	258
17.....	256	256	265	274	274	272	276	283	284	291	288	274
18.....	265	266	262	266	263	270	277	269	277	271	269	271
19.....	265	266	266	268	270	273	278	287	289	286	287	287
20.....	277	277	278	278	279	279	281	277	270	268	269	272
21*.....	282	283	282	284	287	286	287	285	282	284	286	279
22.....	272	270	270	272	274	275	276	279	281	281	287	275
23*.....	282	280	280	280	280	279	284	287	289	289	288	288
24.....	278	279	281	282	284	284	285	287	286	286	282	281
25.....	289	286	284	288	289	289	291	283	282	276	271	264
26.....	269	272	276	276	278	283	290	300	297	290	278	265
27*.....	273	274	276	278	276	275	281	285	282	280	279	282
28.....	273	274	276	278	281	282	287	291	283	282	279	268
29.....	287	286	285	286	286	287	291	291	287	287	285	275
30.....	280	283	283	285	288	291	295	295	288	282	279	281
Mean.....	273	273	274	276	277	279	284	287	285	284	282	277
Mean *.....	277	277	278	279	280	280	285	287	287	287	287	283

DECEMBER, 1904.

1.....	264	268	270	275	278	283	288	289	291	287	285	278
2.....	283	284	283	286	287	289	295	294	289	288	284	282
3.....	281	282	275	278	279	283	285	285	285	297	282	286
4.....	278	279	282	283	283	284	291	295	291	288	285	280
5.....	264	269	271	276	273	276	282	291	287	278	277	268
6*.....	263	266	273	274	274	278	283	284	286	283	285	283
7*.....	272	273	272	273	274	274	282	282	280	284	282	280
8.....	275	276	275	280	281	283	290	294	294	290	287	281
9.....	286	288	290	292	293	288	284	282	276	275	276	272
10.....	266	268	270	272	275	275	279	279	275	270	272	274
11.....	273	276	254	277	275	276	283	286	283	281	285	291
12*.....	276	275	277	276	276	276	280	285	285	284	284	285
13*.....	278	278	280	282	283	282	286	293	294	294	295	293
14.....	274	272	277	281	281	281	286	286	288	285	283	279
15.....	252	260	257	258	263	262	269	272	271	273	276	282
16*.....	277	275	277	275	277	280	286	282	285	278	272	276
17.....	265	266	268	267	267	268	270	274	273	264	261	264
18.....	270	269	270	272	273	275	282	282	273	269	262	253
19.....	278	279	284	284	283	289	290	285	277	281	280	271
20.....	273	272	275	276	276	280	285	288	283	277	279	276
21.....	267	265	265	272	271	270	276	280	280	283	287	289
22*.....	271	271	270	270	271	273	276	278	278	280	280	281
23*.....	275	277	276	277	278	279	284	288	286	292	290	285
24*.....	284	285	286	286	288	286	290	291	287	284	283	276
25.....	281	285	284	285	286	284	289	297	301	305	304	305
26.....	278	280	278	278	279	279	284	290	297	302	296	286
27.....	268	268	271	275	276	275	281	286	284	283	283	272
28*.....	278	279	279	280	280	280	284	287	285	284	281	278
29.....	280	278	278	284	283	283	286	290	293	287	282	265
30.....	266	269	270	272	275	275	278	273	284	285	284	279
31*.....	275	275	278	278	280	281	286	289	290	287	284	278
Mean.....	273	274	275	277	278	279	284	286	285	284	282	279
Mean *.....	275	275	277	277	278	279	284	286	286	285	284	282

* The mean hourly values given on the bottom line are derived from the "quiet days" indicated by asterisks.

13 ^h	14 ^h	15 ^h	16 ^h	17 ^h	18 ^h	19 ^h	20 ^h	21 ^h	22 ^h	23 ^h	24 ^h	Mean.
<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>
264	258	259	264	267	269	270	272	271	271	271	276	271
268	273	280	285	284	284	276	273	271	271	274	271	281
296	293	290	290	286	284	280	281	282	281	282	282	288
252	254	252	247	249	241	235	253	261	257	262	258	265
251	250	252	254	254	254	255	256	253	256	258	256	260
274	268	262	258	259	261	262	262	264	266	269	269	267
272	267	263	265	264	267	268	269	268	267	269	269	272
263	269	261	265	269	273	274	275	277	278	277	277	272
275	270	268	268	270	273	273	275	277	276	276	275	278
288	281	277	275	274	279	278	278	279	281	282	281	281
290	287	279	273	273	276	278	279	279	277	277	277	283
271	267	270	276	274	275	276	274	275	274	274	277	277
278	273	272	275	274	273	275	274	275	274	273	275	278
268	267	275	278	280	280	280	280	279	279	279	279	280
276	270	273	279	282	274	265	265	263	264	257	258	277
259	258	255	253	254	257	260	265	263	259	253	256	259
272	268	260	258	258	265	267	268	263	260	254	256	268
263	258	251	253	258	265	270	269	267	265	265	266	266
284	277	274	274	273	274	274	272	273	272	273	276	276
275	278	274	273	273	278	281	281	281	282	281	282	277
279	282	281	285	286	287	287	288	286	280	277	275	283
279	285	283	285	283	282	281	278	279	282	281	281	279
287	288	289	287	285	282	281	279	280	280	279	281	284
283	285	287	292	291	287	282	286	280	285	284	284	285
260	262	263	257	260	260	262	266	264	260	263	267	272
264	261	263	262	257	256	263	266	270	273	273	274	273
283	275	275	274	266	265	267	270	267	269	269	272	275
267	270	276	278	276	278	278	279	279	279	281	283	278
274	276	280	287	283	277	282	285	285	284	283	282	284
278	281	286	280	278	278	277	275	269	261	264	266	280
273	271	271	272	271	272	272	273	273	272	272	273	276
279	276	275	276	275	276	276	277	276	276	276	276	279

[illegible]

MAGNETIC STORMS.

Magnetic disturbances of considerable magnitude were recorded at the Porto Rico magnetic observatory on the days tabulated below. The table gives the local mean time of the beginning of the disturbance, the approximate duration, and the relative magnitude designated by the figures 1, 2, 3, 4. Where the storm began abruptly the time of beginning is given to the nearest minute. For comparison with similar data for other observatories, the Greenwich mean time of beginning may be found by adding 4^h 22^m.

Principal magnetic disturbances recorded at the Porto Rico Magnetic Observatory.

Date.	L. M. T. of beginning.	Duration in hours.	Relative magnitude.	Date.	L. M. T. of beginning.	Duration in hours.	Relative magnitude.
1903.	<i>h. m.</i>			1903.	<i>h. m.</i>		
April 5.....	19 07	24	3	December 31.....	20	19	1
April 8.....	18	25	2				
May 4.....	17	55	1	1904.			
June 1.....	4	44	2	January 9.....	12 51	36	1
June 28.....	5	20	2	January 28.....	5	100	1
July 5.....	17	12	1	March 3.....	12	51	1
July 25.....	4	52	2	March 25.....	20	28	1
August 4.....	17	8	1	March 31.....	18	82	2
August 10.....	20	28	1	April 17.....	23	36	1
August 21.....	14	47	3	May 12.....	0	72	2
September 4.....	6	48	1	May 16.....	20	31	1
September 7.....	17	54	1	May 27.....	12	36	2
September 19.....	0	37	2	June 6.....	0 24	32	2
September 22.....	19	16	1	June 15.....	7	41	3
September 23.....	19	13	1	July 6.....	2	48	2
September 28.....	14	14	1	July 14.....	2	24	1
October 12.....	3	50	3	August 1.....	20	7	1
October 30.....	17	48	4	August 3.....	9	23	1
November 4.....	2	22	2	September 16.....	1	4	1
November 9.....	18	28	1	September 24.....	15	21	2
November 18.....	7 40	16	1	October 6.....	20	49	2
December 13.....	8	17	1	November 4.....	19	16	1
December 29.....	22 50	13	1	November 15.....	18	62	2
December 30.....	19	10	2	December 14.....	11	52	1

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Results of Observations

... at Vieques, P. R.,

1919 and 1920

